- COMMITTED TO PROTECTION OF THE ENVIRONMENT -

FINAL PHASE II

DATA ADDENDUM

SITE 36-7: SOLID WASTE BURIAL/SANITARY PI

September 1988
Contract Number DAAK11-84-D-0016
(Version 3.1)

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Rocky Mountain Arsenal Information Center Commerce City, Colorado

Environmental Science And Engineering, Inc.
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PREPARED BY

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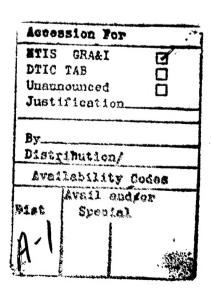
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SITE 36-7: SOLID WASTE BURIAL/SANITARY PIT

1.0 PHASE II PROGRAM

As a result of the Phase I Contamination Assessment at Rocky Mountain Arsenal (RMA), a Phase II program was initiated at Site 36-7 in February, 1988. The Phase II Program was generally conducted as presented in the Phase I Contamination Assessment Report (CAR) (ESE, 1988, RIC#8804^R07), except that only six samples of trench material were obtained instead of the eight samples planned.

The Phase II investigation of Site 36-7 consisted of 8 pit borings yielding 22 samples and 22 soil borings yielding 40 samples. Pit boring locations were selected to explore potential disposal trenches, and soil boring sites were selected to investigate the remaining areas within Site 36-7. Observation pits were excavated with a backhoe in the eight suspected disposal trenches as defined by geophysical anomalies, interpretation of aerial photography, and review of historical data. Each pit was excavated to the trench bottom, as determined by visual inspection. A grab sample believed to be representative of the most contaminated material within the trench was obtained from excavated material. The pit was backfilled with clean (metal free) material, and the location was staked. The pit borings were drilled 5 feet (ft) below the base of the suspected disposal trench and sampled at the 0- to 1- and 4- to 5-ft intervals below the base.

A continuous shallow trench was excavated with a backhoe in the southernmost anomaly to identify the locations and orientations of suspected disposal trenches and to allow observation pits and pit borings to be targeted more accurately.

All soil samples (except for grab samples) were collected using the continuous soil sampling method detailed in the Task 1 Technical Plan (ESE, 1985, RIC#85127R07). Samples were obtained at predetermined intervals unless field conditions (e.g., depth to water table, staining, etc.) necessitated adjustment in the interval selections. Seven 1-ft-deep borings were drilled and sampled using hand-auger equipment. Locations of the observation pits and pit borings are shown on Figure 36-7-II-1 (See Section 2.0),

and locations of all Phase II borings are shown on Figure 36-7-II-2 (See Section 4.0).

The actual Phase II investigation varied from the proposed Phase II program in that only six grab samples of disposal trench material were obtained instead of the eight samples planned. A grab sample from Pit Boring 3682 was not obtained, because only natural soil and bedrock were encountered at that location. A grab sample from Pit Boring 3687 was not obtained, because the excavation caved and resulted in unsafe conditions for equipment and personnel. Boring 3687, however, was drilled through the trench material. The depth of the trench was determined from Boring 3687, and soil samples were obtained from beneath the trench.

Prior to any Phase II drilling, the Program Manager's Office (PMO), Environmental Science and Engineering (ESE), Morrison-Knudsen Engineers (MKE), and Harding Lawson Associates (HLA) formulated procedures for MKE to obtain subsamples from selected soil cores during Phase II drilling. MKE did not request subsamples at Site 36-7.

The following table summarizes the Phase II investigation at Site 36-7:

Boring	Total Depth (ft)	Sampling Interval(s)	No. of Samples
			•
3683*	10	5-6, 9-10	2
3684*	15	2-3+, 10-11, 14-15	3
3685*	17	7-8+, 10-11, 15-16	3
3686*	15	7-8+, 10-11, 14-15	3
3687*	22	17-18, 21-22	2
3688*	14	5-6+, 9-10, 13-14	3
3689*	16	3-4+, 11-12, 15-16	3
3690*	15	4-5+, 10-11, 14-15	3
3691	5	0-1, 4-5	2
3692	5	0-1, 4-5	2
3693	5	0-1, 4-5	2
3694	5	0-1, 4-5	2
3695	5	0-1, 4-5	2
3696	5	0-1, 4-5	2
3697	5	0-1, 4-5	2
3698	5	0-1, 4-5	2
3699	5	0-1, 4-5	2
3700	1	0-1	1
3701	1	0-1	1

3702	1	0-1	1
3703	1	0-1	1
3704	1	0-1	1
3705	1	0-1	1
3706	1	0-1	1
3707	10	0-1, 4-5, 9-10	3
3708	10	0-1, 4-5, 9-10	3
3709	10	0-1, 4-5, 9-10	3
3710	3	0-1, 2-3	2
3711	3	0-1, 2-3	2
3712	3	0-1, 2-3	2
		Total	62

^{*} Pit boring

The Phase II analytical program was conducted as planned with the exception of the grab samples from Borings 3683 and 3687, which were not collected. Fifty-six samples were analyzed for semivolatile organic (SVO) compounds by gas chromatography/mass spectrometry (GC/MS) and for arsenic and mercury by atomic absorption (AA). Sixty-two samples were analyzed for cadmium, chromium, copper, lead, and zinc by the inductively coupled argon plasma (ICP) method. The 4-to 5-ft samples below the base of disposal trenches from Borings 3683 to 3690 and the 9- to 10-ft samples from Borings 3707 through 3709 were analyzed for volatile organic (VO) compounds by GC/MS. Six samples were analyzed by high-performance liquid chromatography (HPLC) for the Army Agent Degradation Products (ADP) thiodiglycol (TDGCL) and chloroacetic acid (CLC2A), and by ion chromatography (IONCHROM) for fluoroacetic acid (FC2A), isopropylmethyphosphonic acid (IMPA), and methylphosphonic acid (MPA).

The six samples from the Phase II borings triangulated around Phase I Boring 3111 were analyzed for ICP metals to investigate the elevated cadmium in Boring 3111. The remaining samples were analyzed for the Phase I suite of analytes, because Phase I samples were not collected in the geophysical anomalies and disposal trenches investigated in the Phase II program. Selected Phase II samples were also analyzed for IMPA and TDGCL to screen for ADPs, as the HPLC and IONCHROM methods were not available during the Phase II program.

⁺ Grab sample of trench material

Phase I and Phase II analytical methods for Site 36-7 samples were the same for VO and SVO compounds, ICP metals, arsenic, and mercury; therefore, Phase I and Phase II results are directly comparable. Appendix 36-7-II-A provides a complete list of analytes, analytical methods, and standard abbreviations used in the Phase I and Phase II investigations.

2.0 PHASE II FIELD OBSERVATIONS

Surface conditions at Site 36-7 have not changed appreciably since the Phase I investigation was completed in the summer of 1985 (ESE, 1988, RIC#88063R07). Figure 36-7-II-1 shows the locations of excavated pits and trenches, excavation depths, trend outlines of possible disposal trenches as interpreted from aerial photographs, actual widths of intercepted disposal trenches, and a cross section showing the continuous shallow excavation profile with the intercepted disposal trenches projected onto the cross section. Table 36-7-II-1 presents a summary of pit excavation activities and observations.

Ground water was not encountered at any of the Phase II pits or borings at Site 36-7. Volcaniclastic bedrock was encountered in seven of the eight pit borings. Bedrock depths are presented on Table 36-7-II-1.

For safety purposes, air monitoring was conducted using a photoionization detector (PID) during drilling and excavation activities. In general, PID readings in the auger annulus and open trenches were background except in Pit Boring 3687, which registered a PID reading of 13.2 in the hollow-stem annulus at the 16- to 18-ft depth, and Boring 3698, which had a PID reading of 24 in the 0- to 1-ft sample. PID readings were at background levels in the breathing zone during field activities.

An M18A2 test kit was used to detect the presence of chemical agents in trenches, boreholes, and soil samples. Specifically at RMA, the M18A2 test kit is used to detect Sarin (GB), nerve agent (VX), mustard (H), and Lewisite (L), based on the knowledge that these agents were manufactured, stored, or demilitarized at the site. The detection limit for mustard agents is 0.5 milligrams per cubic meter (mg/m 3), and the detection limit for GB, VX, and L is 0.2 mg/m 3 . The detection limits for L and VX in soil are 5 and 5.9 parts per million (ppm), respectively. All M18A2 field test results for chemical agents at this site were negative.

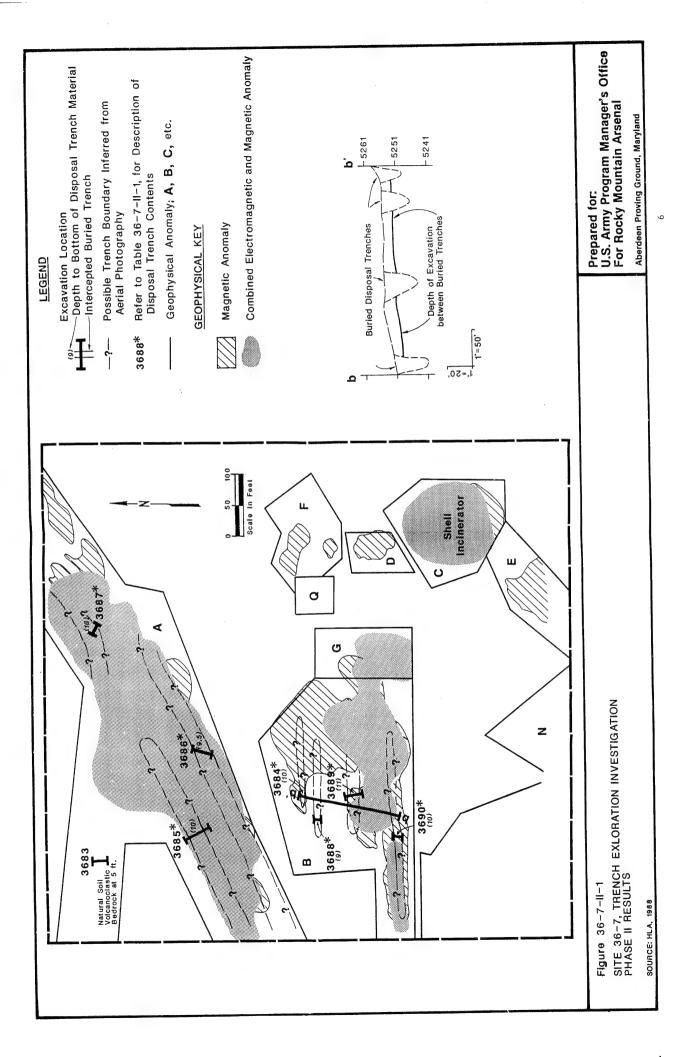


Table 36-7-II-1. Summary of Pit Boring Activities and Observations

Pit	Boring No.	Disposal Trench Depth (ft)	Pit Boring Depth (ft)	Disposal Trench Contents	Comments
	3683	Trench not encountered	10	None	Volcaniclastic bedrock at 5 ft
:	3684	10	15	Paper, plastic, metal, lumber	Siltstone/ volcaniclastic bedrock at 12.5 ft
	3685	10	17	Plastic pipe, scrap metal, wood	Volcaniclastic bedrock at 9.5 ft
	3686	9.5	15	Paper, cans, respirators, M-19 casings, scrap metal	Volcaniclastic bedrock at 9.2 ft
	3687	16*	22	Paper, lumber, plastic	Excavation pit abandoned due to severe instability
	3688	9	14	Paper, lumber, plastic	Volcaniclastic bedrock at 10.4 ft
	3689	11	16	Old tires, auto- motive trash	Volcaniclastic bedrock at 15.5 ft
	3690	10	15	Paper, wood, plastic	Volcaniclastic bedrock at 10 ft

 $_{\mbox{\scriptsize $\%$}}$ Estimated from soil core obtained during drilling

Source: ESE, 1988.

Samples at Site 36-7 were also tested for chemical agents by the RMA laboratory, because historical evidence indicated possible agent presence. A composite of aliquots from each sample was initially analyzed for GB, VX, H, and L. If agent had been detected, individual samples from each boring would have been analyzed to identify stratigraphic location. No positive results for chemical agents were found at this site.

3.0 PHASE II GEOPHYSICAL EXPLORATION

No geophysical survey was conducted at Site 36-7 for the Phase II investigation. Fifteen boring locations were cleared, however, for safety purposes in accordance with the borehole clearance geophysical program detailed in the Task 1 Technical Plan (ESE, 1985, RIC#85127R07). Borehole site clearance was used to ensure that drilling would not encounter buried unexploded ordnance or other metal that could pose a significant safety risk. Magnetic intensity readings were obtained with a gradiometer. A 20-ft-square grid was centered at each boring location, and gradiometer readings were obtained at 5-ft intervals throughout the area. A contour map was prepared from the data and was used to place the boring in the safest location within the geophysical plot. Following borehole site clearance, a metal detector was used to check for surficial (0 to 2 ft) metal. None of the 15 borings were relocated as a result of the borehole site clearance conducted at Site 36-7.

The seven hand-augered boring locations were cleared by a metal detector survey for shallow (0 to 2 ft) buried metal. None of these borings had to be relocated after the metal detector survey.

4.0 PHASE II ANALYTE LEVELS AND DISTRIBUTION

Table 36-7-II-2 contains indicator ranges and a statistical summary of Phase II analytical results. A summary of analytical data for each sample, including lithology and air monitoring results, is presented in Table 36-7-II-3. A tabulation of all analytical data associated with the Phase II investigation at this site is presented in Appendix 36-7-II-B.

To assess the significance of metal and organic analytical values, indicator ranges were established during the Phase I program. For organic compounds, the indicator level is the method detection limit. For metals, a range of values was chosen to reflect the upper end of the expected natural range for each metal as normally found in RMA alluvial soil. The procedure for establishing indicator ranges is presented in the Introduction to the Contamination Assessment Reports (ESE, 1987, RIC#88204R02). Concentrations within or above indicator ranges for Phase I and Phase II data are presented in Figure 36-7-II-2.

Eleven samples were analyzed for VO compounds; the only target compound detected was methylene chloride in two samples at low concentrations (Boring 3684, 14 to 15 ft, 1 ppm; Boring 3690, 14 to 15 ft, 0.7 ppm). Fifty-six samples were analyzed for SVO; dieldrin was the most prevalent compound detected with concentrations ranging from 0.3 to 10 parts per million (ppm) in 8 samples. Four samples contained chlorophenylmethyl sulfone (CPMSO₂) at concentrations ranging from 0.7 to 2 ppm. Isodrin, endrin, chlorophenylmethyl sulfide (CPMSO), and chlorophenylmethyl sulfoxide (CPMSO) were each detected in one sample.

Four of the dieldrin detections, the endrin detection (1 ppm), and the isodrin detection (0.5 ppm) were found in samples from the pit borings. Phase II results showed a dieldrin detection of 10 ppm in the grab sample from the 2-to 3-ft interval of Pit Boring 3684. Lower levels of dieldrin were detected in Pit Borings 3686 (1 ppm, 7- to 8-ft interval), 3688 (0.4 ppm, 5- to 6-ft interval), and 3691 (2 ppm, 0- to 1-ft interval). The highest concentration was detected in Pit Boring 3684, which is approximately 50 ft northwest of Boring 3113. As noted in Table 36-7-II-1, Pit Boring 3684 (2- to 3-ft interval) was sampled from a buried disposal trench containing paper, lumber, metal, and plastic.

Summary of Analytical Results for Site 36-7 Phase II Soil Samples Table 36-7-11-2.

Constituent	Number of Samples*	Range	Mean**	Median**	Standard Median** Deviation**	ESE Detection Limit	Indicator Level
IMPA (N=6)+	-						
IMPA	0	1	1	ł	1	2.1	DF
Fluoroacetic Acid	2	2.9-15	1	;	1	2.0	5
MPA	0	. 1	ł	}	ł	2.0	7
TDGCL (N=6)+							
Thiodiglycol Chloroacetic Acid	00	1 1		1 1	1 1	2.6 18	겁겁
TOTAL SOURCE OBSANICS CN-111A							
Methylene Chloride	2	0.7-1	1	1	!	0.3	DF
SEMIVOLATILE ORGANICS (N=56)+							
CMPS		00	!	1	I I	0.3	Ĭ
CMPSO	_	4	1	ł	!	0.4	ק
CMPS02	4	0.7-2	1	1	1	0.3	DF
Dieldrin	8	0.3-10	2	0.9	m	0.3	DL
Endrin		_	1	ţ	1	0.7	DF
Isodrin	-	0.5	1	I	1	0.3	DF
ICP METALS (N=62)+							
Cadmium	_	1.3	1	ł	1	0.92	DL-2.0
Chromium	37	8.4-18	12	12	2.5	7.2	25-40
Copper	62	6.5-77	91	=	13	8.8	20-35
Lead	7	22-81	20	48	23	17	25-40
Zinc	62	25-250	26	44	37	91	08-09
ARSENIC (N=56)+	7	6.0-15	7.9	8.9	3.3	4.7	DL-10
MFRCIRY (N=56)+		0 054.2.1	000			0	ā

 ^{**} Number of samples in which constituent was detected. Only these sample results were used in statistical analyses.
 ** Statistics not calculated when constituent detected in fewer than five samples.
 + Number of samples analyzed by laboratory.
 DL Detection limit.

Source: ESE, 1988.

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Table 36-7-11-3. Concentrations of Target Analtyes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 1 of 5)

Geologic Material	5-6 Volcani- clastic (Denver Fm)	3083 9-10 Volcani- clastic (Denver Fm)	2084 2-3 Trench Material	3084 10-11 Clayey Silt (3084 14-15 Volcani- clastic (Denver Fm)	3685 7-8 Trench Material (3685 10-11 Volcani- clastic (Denver Fm)	3685 15-16 Voicani- clastic (Denver Fm)	3686 7-8 Trench Material	3686 10-11 Volcani- clastic (Denver Fm)	3686 14-15 Volcani- clastic (Denver Fm)	3687 17-18 Clayey Silt
AIR MONITORING PID*	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKO	BKD	BKD	13.2
SOIL CHEMISTRY IMPA (ug/g) IMPA Fluoroacetic Acid MPA	NRQ NRQ NRQ	NRQ NRQ NRQ	80L 80L 80L	NRQ NRQ NRQ	NRQ NRQ NRQ	80L 15	NRQ NRQ NRQ	NRQ NRQ NRQ	108 80L 80L	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ
TDGCL (ug/g) Thiodiglycol Chloroacetic Acid	NRQ NRQ	NRQ NRQ	B0L 80L	NRQ NRQ	NRQ	BDL	NRQ NRQ	NRO	BDL BOL	NRQ NRQ	NRQ NRQ	NRQ NRQ
Volatile Organics (VO) by GC/MS (ug/g) Methylene Chloride	NRQ	BDL	NRQ	NRQ	-	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ
Semivolatile Organics (SVO) by GC/MS (ug/g) CPMS CPMSO CPMSO2 Dieldrin Endrin Isodrin	80L 80L 80L 80L 80L 80L 80L	. 8DL 8DL 8DL 8DL 8DL 8DL 8DL	8DL 8DL 8DL 10 10	8DL 8DL 8DL 0.3 8DL 8DL 8DL	80L 80L 80L 80L 80L 80L 80L	60L 80L 0.7 80L 80L 80L	80L 80L 80L 80L 80L 80L 80L	708 708 708 708 708	80L 80L 80L 80L 80L 80L	801 801 801 801 801 801	80L 80L 1 80L 80L 80L	108 108 108 108
ICP metals (ug/g) Cadmium Chromium Copper Lead Zinc	80L 80L 34 80L 67	BDL BDL 32 8DL 71	BDL 17 25 42 76	BDL 9.5 23 48 49	80L 80L 51 80L 87	1.3 12 33 61 170	BDL BDL 35 BDL 65	80L 80L 41 80L 85L	BDL 12 18 18 BDL 62	80L 80L 12 80L 80L	80L 80L 20 80L 80L 55	80L 80L 27 80L 80L 58
Arsenic (ug/g)	BDL	BDL	7.5	BDL	B0L	7.0	BDL	BDL	BDL	BDL	BDL	BDL
Mercury (ug/g)	BDL	BDL	0.11	0.14	BDL	1.7	0.075	BDL	BOL	BDL	BDL	BDL

Higher detection limit due to dilution or soil matrix masking effects. Quantitative concentration was not achieved due to dilution constraints. As calibrated to an isobutylene standard. Below detection limit.

No reading above ambient background. Analysis not requested.

Not analyzed.

C-RMA-PH11/367HTB3.WK1

Table 36-7-11-3. Concentrations of Target Analtyes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 2 of 5)

AIR MONITORING BKD BKD	3687 21-22 Silty Clay 1	3688 5-6 Trench Material	3688 9-10 Clayey Silt	3688 13-14 Volcani- clastic (Denver Fm)	3689 3-4 Trench Material	3689 11-12 Sandy Silt	3689 15-16 Silt	3690 4-5 Trench Material	3690 10-11 Volcani- clastic (Denver Fm)	3690 14-15 Volcani- clastic (Denver Fm)	3691 0-1 Silty Sand	3691 4-5 Silty Sand
FY It Acid NRQ NRQ BDL NRQ NRQ NRQ NRQ NRQ NRQ NRQ NR	2	و	ğ	غ غ	d c	ć	2	غ غ	à	ć	2	2
tic Acid NRQ NRQ BDL NRQ SDL NRQ SDL NRQ SDL NRQ SDL NRQ SDL SDL SDL SDL SDL SDL SDL SD	ONG ONG	O O O	DVD		a ky	O. W.	BAU	O VS		N N	O Na	BAN
NRQ BDL NRQ NRQ NRQ BDL NRQ NRQ BDL BDL BDL BDL BDL BDL BDL <	NRQ NRQ NRQ	BDL BDL BDL	NRQ NRQ NRQ	NRQ NRQ NRQ	80L 80L	NRQ NRQ NRQ	NRQ NRQ NRQ	8DL 2.9 8DL	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ
BDL NRQ NRQ BDL BDL BDL BDL BDL	NRQ NRQ	BDL	NRQ NRQ	NRQ NRQ	BDL	NRQ NRQ	NRQ NRQ	108 80L	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ
BDL BDL BDL BDL		NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	0.7	NRQ	NRQ
(9) 80L		80L 80L 80L 0.4	80L 80L 80L	80L 80L 80L 80L 80L	80 P B B B B B B B B B B B B B B B B B B	BDL BDL 2 BDL BDL	80L 80L 2 80L 80L	80L 80L 80L 80L 80L	BDL BDL BDL BDL BDL	108 108 108 108 108	BDL BDL 2 2 2 8DL	8 4 BDL BDL BDL
80L 80L 80L 80L 80L 34 77 11 41 80L	BDL	BDL	BDL	8DL	BDL	BDL	BOL	BDL	BDL	BDL	BDL	BD
85 100 39 78 BDL 6.8 BDL BDL 0.063 0.30 0.13 BDL C	80L 80L 34	BDL 15 77	80F	BDL BDL 41	BDL BDL 21	BDL 14	8DL 9.9	BDL 17 20 20	80L 9.4 10	BDL 12	BDL 12	BDL 12 9.3
8DL 6.8 BDL BDL 6.9 BDL 0.063 0.30 0.13 BDL	85 85	100	39	78 78	250	48	57 57	150	80L 40	57 57	44 44	41
0.063 0.30 0.13 BDL	BDL	6.8	BDL	BDL	BDL	BDL	80F	6.7	BDL	BDL	BDL	BDL
	0.063	0.30	0.13	BDL	0.11	BDL	BOL	BDL	BDL	BDL	BDL	BDL

Higher detection limit due to dilution or soil matrix masking effects. Quantitative concentration was not achieved due to dilution constraints. As calibrated to an isobutylene standard. Below detection limit.

No reading above ambient background.
Analysis not requested.

Not analyzed.

C-RMA-PH11/367HTB3.WK1

Table 36-7-11-3. Concentrations of Target Analtyes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 3 of 5)

Boring Number Depth (ft) Geologic Material	3692 0-1 Silty Sand	3692 4-5 Silty Sand	3693 0-1 Silty Sand	3693 4-5 Silty Sand	3694 0-1 Silty Sand	3694 4-5 Silty Sand	3695 0-1 Sandy Silt	3695 4-5 Sandy Silt	3696 0-1 Silty Sand	3696 4-5 Silty Sand	3697 0-1 Sifty Sand	3697 4-5 Silty Sand
AIR MONITORING PID*	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD
SOIL CHEMISTRY IMPA (ug/g) IMPA Fluoroacetic Acid MPA	NRQ NRQ NRQ	NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	N N N N N N N N N N N N N N N N N N N	NRQ NRQ
TDGCL (ug/g) Thiodiglycol Chloroacetic Acid	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ
Volatile Organics (VO) by GC/MS (ug/g) Methylene Chloride	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Semivolatile Organics (SVO) by GC/MS (ug/g) CPMSO CPMSO CPMSO2 Dieldrin Endrin	108 108 108 80 80 80 80	80L 80L 80L 80L 80L 80L	8DL 8DL 8DL 8DL 8DL 8DL	8DF 8DF 8DF 8DF 8DF 8DF 8DF	801 801 801 801 801 801	80L 80L 80L 80L 80L 80L 80L	108 108 108 108 108	BDL BDL BDL BDL BDL BDL BDL	BDL BDL BDL BDL BDL BDL BDL	80L 80L 80L 80L 80L 80L	80L 80L 80L 80L 80L	80L 80L 80L 80L 80L
ICP metals (ug/g) Cadmium Chromium Copper Lead Zinc	BDL BDL 8.3 BDL 35	BDL 8.8 8.8 BDL 35	BDL BDL 8.9 BDL 32	80L 12 13 80L 50	BDL 11 14 72 130	BDL 9.0 9.1 BDL 36	8DL 18 13 8DL 56	BDL 15 15 BDL 56	BDL BDL 10 39	BDL 12 8.4 BDL 36	8DL 9.3 8.8 8DL 45	8DL 8DL 6.8 8DL 33
Arsenic (ug/g)	BDL	BDL	BDL	BDL	15	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Mercury (ug/g)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.1	BDL	0.061	BDL	BDL

Higher detection limit due to dilution or soil matrix masking effects. Quantitative concentration was not achieved due to dilution constraints. As calibrated to an isobutylene standard. Below detection limit.

No reading above ambient background.
Analysis not requested.

Not analyzed.

BDL BKD NRQ NA

C-RMA-PHII/367HTB3.WK1

Table 36-7-11-3. Concentrations of Target Analtyes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 4 of 5)

Boring Number Depth (ft) Geologic Material	3698 0-1 Silty Sand	3698 4-5 Silty Sand	3699 0-1 Silty Sand	3699 4-5 Silty Sand	3700 0-1 Sandy Silt	3701 0-1 Sandy Silt	3702 0-1 Sandy Silt	3703 0-1 Sandy Silt	3704 0-1 Silty Sand	3705 0-1 Sandy Silt	3706 0-1 Sandy Silt	3707 0-1 Silty Sand	3707 4-5 Sand
AIR MONITORING PID*	24	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD
SOIL CHEMISTRY IMPA (ug/g) IMPA Fluoroacetic Acid MPA	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRO NRO NRO
TDGCL (ug/g) Thiodiglycol Chloroacetic Acid	NRQ NRQ	NRQ NRQ	NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ
Volatile Organics (VO) by GC/MS (ug/g) Methylene Chloride	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	MRQ	NRQ	NRQ	NRQ	NRQ
Semivolatile Organics (SVO) by GC/MS (ug/g) CPMS CPMSO CPMSO Dieldrin Endrin Isodrin	901 801 801 801 801 801	80L 80L 80L 80L 80L	80L 80L 80L 80L 80L	8DF 8DF 8DF 8DF 8DF 8DF	108 108 108 108 108 108	80L 80L 80L 80L 80L 80L	108 108 801 801 801	BDL BDL BDL 4 BDL BDL BDL	BDL BDL BDL BDL BDL BDL BDL	80L 80L 80L 80L 80L 80L	80L 80L 80L 80L 80L 80L	80L 80L 80L 80L 80L	80L 80L 80L 80L 80L
ICP metals (ug/g) Cadmium Chromium Copper Lead Zinc	BDL BOL 7.4 BDL 34	8DL 9.5 8.9 8DL 39	BDL BDL 7.7 BDL 35	BDL 11 10 BDL 44	80.8 8.8 9.8 80L 37	BDL BDL 8.4 BDL 28	BDL 11 12 23 49	8DL 12 13 8DL 46	BDL 16 8.7 BDL 33	BDL 10 11 8DL 52	BDL 12 9.3 8DL 39	BDL BDL 7.0 BDL 25	BDL 11 9.4 BDL 35
Arsenic (ug/g)	BOL	BDL	BOL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	6.2	BDL	BDL
Mercury (ug/g)	BDL	BDL	BDL	BDL	0.054	0.12	0.32	0.065	BDL	BDL	BDL	BDL	BDL

Higher detection limit due to dilution or soil matrix masking effects. Quantitative concentration was not achieved due to dilution constraints. As calibrated to an isobutylene standard. Below detection limit.

No reading above ambient background. Analysis not requested.

BDL BKD NRQ NA

C-RMA-PH11/367HTB3.WK1

Table 36-7-11-3. Concentrations of Target Analtyes Above Detection Limits in Site 36-7 Phase Il Soil Samples (page 5 of 5)

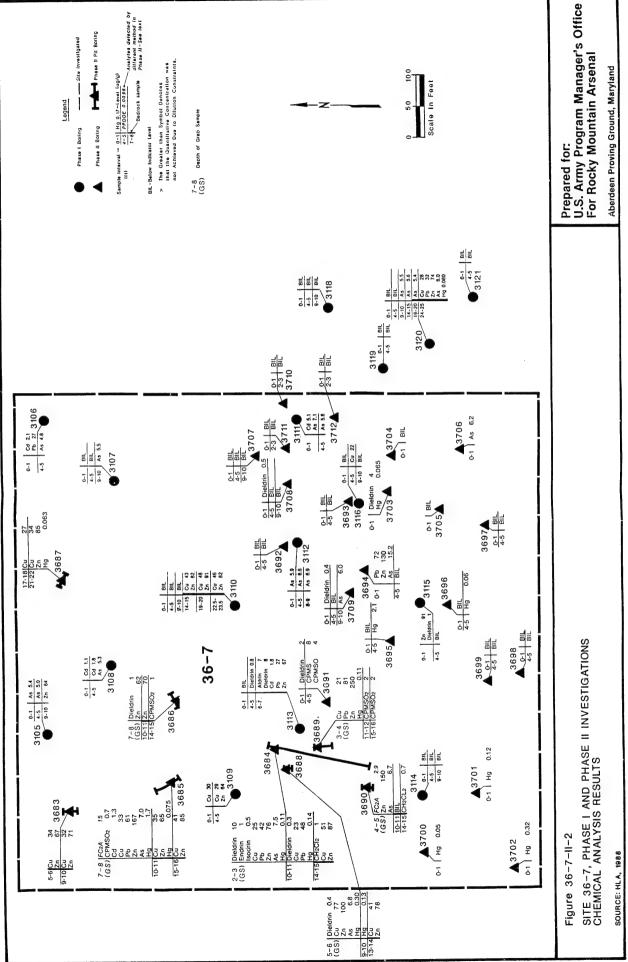
Boring Number Depth (ft) Geologic Material	3707 9-10 Silty Sand	3708 0-1 Sandy Silt	3708 4-5 Clayey Silt	3708 9-10 VFG Sand	3709 0-1 Sandy Silt	3709 4-5 Clayey Silt	3709 9-10 VFG Sand	3710 0-1 Silty Sand	3710 2-3 Silty Sand	3711 0-1 Silty Sand	3711 2-3 Silty Sand	3712 0-1 Silty Sand	3712 2-3 Silty Sand
AIR MONITORING PID**	BKD	BKD	BKD	BKD	BKD	BK D	BKD	BKD	BKD	BKD	BKD	BKD	BKD
SOIL CHEMISTRY IMPA Fluoroacetic Acid MPA	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ NRQ	NRQ NRQ
TDGCL (ug/g) Thiodiglycol Chloroacetic Acid	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ	NRQ NRQ
Volatile Organics (VO) by GC/MS (ug/g) Methylene Chloride	BDL	NRQ	NRQ	BDL	NRQ	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Semivolatile Organics (SVO) by GC/MS (ug/g) CPMS CPMSO CPMSO2 Dieldrin Endrin Isodrin	801 801 801 801 801 801	80L 80L 0.5 80L 80L 80L 80L	80L 80L 80L 80L 80L 80L	80L 80L 80L 80L 80L	8DL 8DL 8DL 0.4 8DL 8DL	80 BD	80L 80L 80L 80L 80L 80L	NRQ NRQ NRQ NRQ NRQ	N N N N N N N N N N N N N N N N N N N	NRQ NRQ NRQ NRQ NRQ	N N N N N N N N N N N N N N N N N N N	NRO NRO NRO NRO NRO	N N N N N N N N N N N N N N N N N N N
ICP metals (ug/g) Cadmium Chromium Copper Lead Zinc	BDL 9.3 11 BDL 34	80L 80L 11 80L 39	8DL 9.1 9.8 8DL 35	BDL 16 12 8DL 39	BDL 12 14 BDL 54	BDL 15 14 8DL 51	BDL 11 13 8DL 37	BDL BDL 8.8 BDL 34	BDL BDL 6.5 BDL 28	BDL 11 9.1 BDL 37	BDL 10 7.8 BDL 32	BDL BDL 7.5 BDL 34	80L 11 9.0 80L 40
Arsenic (ug/g)	BDL	BDL	BDL	BDL	BDL	BDL	6.0	NRQ	NRO	NRQ	NRQ	NRQ	NRQ
Mercury (ug/g)	BDL	BDL	BDL	BDL	BDL	BOL	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ

Higher detection limit due to dilution or soil matrix masking effects. Quantitative concentration was not achieved due to dilution constraints. As calibrated to an isobutylene standard. Below detection limit.

No reading above ambient background.
Analysis not requested.
Not analyzed.

^{*} BBDL BKD NRQ NA

Source: ESE, 1988.



Dieldrin was detected in the 0- to 1-ft sample interval from Boring 3703 at a concentration of 4 ppm. This boring was located adjacent to the northwest corner of the Shell incinerator. Dieldrin was also detected in Boring 3708 (0.5 ppm, 0- to 1-ft interval) and Boring 3709 (0.4 ppm, 0- to 1-ft interval). Boring 3708 is located at the intersection of the entrance to the incinerator, and Boring 3709 is in the fill area within Anomaly G.

The organosulphur compounds CPMS and CPMSO were detected at concentrations of 8 ppm and 4 ppm, respectively, in the 4- to 5-ft sample interval of Boring 3691. Four samples obtained at depths greater than 7 ft contained $CPMSO_2$ at concentrations ranging from 0.7 to 2 ppm. Three of these samples were collected below the base of suspected disposal trenches.

Of the ICP metals, cadmium, copper, lead, and zinc were detected in 1, 14, 5, and 15 samples, respectively, at concentrations within or above their indicator ranges. High concentrations of zinc, copper, and lead were detected in samples obtained from four pit borings (3684, 3688, 3689, and 3690) located in Anomaly B. With the exception of one lead and one zinc value, all of the ICP metal values within or above indicator ranges are associated with the grab samples of trench material or bedrock samples from the pit borings.

Seven of the 56 samples analyzed for arsenic were within or above the indicator range. Arsenic concentrations were in the middle of the indicator range, except Boring 3694 (0 to 1 ft) which contained arsenic at 15 ppm. Mercury was detected in 14 of 56 samples at concentrations ranging from 0.054 to 2.1 ppm. Higher mercury values are generally associated with samples obtained from the pit borings.

Grab samples from various depth intervals (see Table 36-7-II-3) were analyzed for TDGCL, IMPA, FC2A, and MPA. FC2A was detected in grab samples obtained from Pit Boring 3685 (7- to 8-ft interval) and Pit Boring 3690 (4- to 5-ft interval) at concentrations of 15.2 and 2.9 ppm, respectively.

The data reporting procedures as described in the Laboratory Quality Assurance Plan for RMA (ESE, 1985, Appendix B, RIC#85127R07) require that all analyses on a sample be completed within their respective holding time and that analytical results be corrected for percent recovery and moisture content. During routine sample analysis, analytical results must either fall within or be diluted within the Certified Range provided that holding times have not expired.

During laboratory certification, an analytical method is tested over a certain concentration range to determine the Certified Range. A typical tested concentration range would be 0, 0.5%, 1.0%, 2.0%, 5.0%, and 10.0%, where X is the Target Reporting Limit (TRL). The Certified Reporting Limit (CRL) is determined by comparing the target and actual concentrations of the tested range. The upper Certified Range is the higher target concentration achieved.

If a sample analysis indicates that the sample was not diluted adequately to be within the Certified Range, the result is reported as greater than (>) the upper Certified Range times any dilution factors. If a sample has exceeded its holding time and the result is greater than the Certified Range, the result is reported as greater than the upper Certified Range. If holding times are exceeded in attempting to dilute the sample until all results are within the Certified Range, results that are not identified above the Certified Range but that may be present at concentrations above the certified detection limit are reported as the detection limit times the dilution factor.

Several compounds detected by GC/MS were not included in the target compound list and were not conclusively identified. These compounds are included in the data presented in Appendix 36-7-II-B. Table 36-7-II-4 summarizes nontarget compounds detected at Site 36-7. It should be noted that an individual compound may have more than one retention time and that a particular retention time may be assigned to more than one compound. Table 36-7-II-4, therefore, provides only a general indication of additional compounds that may be present.

C-RMA-PH11/367HTB4.WK1

Table 36-7-11-4. Tentative Identification of Nontarget Compounds in Site 36-7 Phase II Soil Samples (page 1 of 4)

Sept	Boring Number	interval Depth (ft)	Number	Above Background (ppm)*	Number	Lot	Best Fit	Comments
9-10 526 19 36-7-47X3 KTI http://www.nationaredioate 2-3 587 0.9 36-7-47X5 KES Unknown indinatedioate 2-3 587 0.9 36-7-47X5 KES Unknown indinatedioate 558 1 10 Unknown indinatedioate 554 0.9 36-7-47X6 KXG http://www.nationaredioate 558 1 10 Unknown indinatedioate 558 2 36-7-47X6 KXG http://www.nationaredioate 558 1 10 Unknown indinatedioate 558 0.9 36-7-47X7 KZO Hexamethylogiclotrisiloxane 559 0.9 36-7-47X7 KZO Hexamethylogiclotrisiloxane 550 0.9 10 Unknown in a lease 550 0.9 10 Unknown in a lease 550 0.9 10 Unknown alkane	83	2-6	526	01	36-7-47X2	KX	Methylhexanone	τ
587 0.9 36-7-47% KES Unknown 588 1		01-0	526	χ <u>(</u>	36-7-47X3	ΚX	Methulhexanone	,
2-3 587 0.9 36-7-47X5 KES Unknown 10-11 524 8 36-7-47X6 KX6 Hethylinexanone 10-11 524 8 36-7-47X6 KX6 Hethylinexanone 554 0.9 Hethylinexanone 558 1 Unknown 558 2 A Hethylinexanone 558 0.9 Hethylinexanone 559 0.9 Hethylinexanone 550 0.9 Hethylinex		2	614	4			Dibutyl nonanedioate	ס
Unknown Sab 1	84	2-3	587	6.0	36-7-47X5	KES	Unknown	a, f
10-11 524 8 36-7-47X6 KX hetylihadroxidimethylpyridinone 549 0.9 0.9 1 hetylihadroxidimethylpyridinone 559 0.9 0.9 1 hetylihacanone 556 1 1 hknown size 656 1 1 hknown size 656 1 hknown size 65	5	1	588	-			Unknown	ю
10-11 524 8 36-7-47% KVG Hethylhexanone 549 0.9 0.9 0.9 0.9 0.9 0.8 0.9 0.8 0.9 0.8 0.9 0.8 0.9 0.8 0.8 0.8 0.9 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.9 0.8 0.9 0.8 0.9 0.8 0.9 0.8 0.9 0.9 0.8 0.9			593	2			Acety hydroxydimethy pyridinone	
549 0.9 Pentanoic acid 5 554 1 Unknown 0 558 1 Nonanoic acid 0 566 1 Nonanoic acid 0 586 2 December of acid 0 598 2 ACT-47X7 KZQ Hexamethylcyclotrisiloxane 524 8 36-7-47X7 KZQ Hexamethylcyclotrisiloxane 558 0.9 Actual Methylexanone Onknown 0 566 0.9 Nonanoic acid 0 0 578 1 36-7-47X9 KES Unknown 615 2 36-7-47X9 KES Unknown 559 2 36-7-47X9 KES Unknown 576 0.9 Octanoic acid 0 0 578 1 36-7-47X9 KES Unknown 578 2 36-7-47X9 KES Unknown 578 1 36-7-47X9 KES Unknown		10-11	524	8	36-7-47X6	KXG	Methylhexanone	
554 1 Unknown 558 1 Unknown 566 1 Careanoic acid 566 2 Dodecanoic acid 586 2 Tetradecanoic acid 586 2 36-7-47X 588 2 Tetradecanoic acid 566 1 Noranoi caid 586 1 Noranoi caid 586 1 Decanoic acid 615 2 Dodecanoic acid 559 1 Tetradecanoic acid 615 2 Dodecanoic acid 559 2 Dodecanoic acid 615 2 Dotathi nonanedioate 576 0.9 Decanoic acid 615 2 Dotathi nonanedioate 616 3 36-7-47X9 KES Unknown 578 10 Unknown Unknown Calcinoic acid 615 2 Chincoperatemanine Chincoperatemanine 622 1 Unknown Un			549	6.0			Pentanoic acid	d, f
14-15 558 1			554	_			Unknown	ю
566 1 Nonanoic acid 586 2 Dodccanic ic acid 586 2 Dodccanic acid 598 2 AKZ 598 2 AKZ 524 8 36-7-47X 558 0.9 Nonanoic acid 566 1 Nonanoic acid 578 1 Dodccanic acid 615 2 Dodccanic acid 578 1 Tetradecanic acid 573 2 Dodccanic acid 574 1 Tetradecanic acid 575 2 Dodccanic acid 578 1 Nonanoic acid 573 0.9 Dodccanic acid 574 0.9 Nonanoic acid 575 2 Dodccanic acid 578 1 Nonanoic acid 578 2 Doctanoic acid 578 2 Doctanoic acid 578 2 Doctanoic acid 578 2			558				Unknown	co
14-15 160 598 2 Tractaccanoic acid 14-15 160 9 36-7-47X7 KZO Tractaccanoic acid 15 160 9 36-7-47X7 KZO Hexamethylcyclothrisiloxane 15 160 9 36-7-47X7 KZO Hexamethylcyclothrisiloxane 15 10 Nonanoic acid 15 10 Nonanoic acid 16 10 Nonanoic acid 17 10 Nonanoic acid 18 19 36-7-47X9 KES Uhknown 19 Nonanoic acid 10 Nonanoic acid			999				Nonanoic acid	р
14-15 598 2 36-7-47X7 KZQ Hexamethy Equilotris i loxane 524 8 8 36-7-47X7 KZQ Hexamethy Equilotris i loxane 558 0.9 Right Hexanone Unknown 558 1 Roadcandic acid 598 1 Roadcandic acid 598 1 36-7-47X9 KES Unknown 558 2 Roadcandic acid 558 2 Roadcandic acid 558 2 Roadcandic acid 578 10 Roadcandic acid 622 1 Roadcandic acid 624 0.9 Roadcandic acid 625 1 Roadcandic acid 626 1 Roadcandic acid 627 1 Roadcandic acid 628 4 Unknown alkane 629 Roadcandic acid 620 Roadcandic acid 621 Roadcandic acid 622 Roadcandic acid 623 Roadcandic acid 624 Roadcandic acid 625 Roadcandic acid 626 Roadcandic acid 627 Roadcandic acid 628 A Unknown alkane 629 Roadcandic acid 620 Roadcandic acid 621 Roadcandic acid 622 Roadcandic acid 623 Roadcandic acid 624 Roadcandic acid 625 Roadcandic acid 626 Roadcandic acid 627 Roadcandic acid 628 Roadcandic acid 629 Roadcandic acid 620 Roadcandic acid 621 Roadcandic acid 622 Roadcandic acid 623 Roadcandic acid 624 Roadcandic acid 625 Roadcandic acid 626 Roadcandic acid 627 Roadcandic acid 628 Roadcandic acid 629 Roadcandic acid 620 Roadcandic acid 621 Roadcandic acid 622 Roadcandic acid 623 Roadcandic aci			586	~			Dodecano ic acid	Ф
14-15 160 9 36-7-47X7 KZQ Hexamethyl Cyclotrisi loxane 524 8 KXG Methyl Inexanone 558 0.9 Unknown 566 1 Nonanoi c acid 558 1 Tetradecanoi c acid 615 2 Dibutyl nonanedioate 559 2 Dibutyl nonanedioate 559 2 Dibutyl nonanedioate 550 2 Dibutyl nonanedioate 550 2 Dibutyl nonanedioate 578 10 Nonanoi c acid 578 10 Unknown 588 2 Dibutyl nonanedioate 578 10 Unknown 588 2 Unknown 588 3 Unknown 589 4 Unknown 580 1 Unknown 580 1 Unknown 581 4 Unknown 582 2 Unknown 584 1 Unknown 585 1 Unknown 586 1 Unknown 587 1 Unknown 588 1 Unknown 589 1 Unknown 580 1 Unk			598	100			Tetradecanoic acid	Ф
7-8 543 1 36-7-47% KES Unknown alkane 655 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		14-15	160	ا م	7474-7-AF	K70	Hevamethulouclotrisiloxane	
558 0.9 Unknown 558 1 1		7	524	- α	200	XXX	Methothexanone	
Second 1			170	<i>o</i>			Linknown	(-
Second 1			272	6.0			City City County	
7-8 543 1 36-7-47X9 KES Unknown 559 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			200) T
7-8 543 1 36-7-47X9 KES Unknown 559 1 1 36-7-47X9 KES Unknown 559 2 0ctanoic acid Nonancic acid Nonancic acid Nonancic acid S76 0.9 0.9 Trichlorobenzenamine Unknown 558 2 0.9 Unknown alkane 622 1 Unknown alkane 624 0.9 Unknown alkane 624 0.9 Unknown alkane 624 0.9 Unknown alkane 634 4 Unknown alkane 634 1 Unknown alkane 634 1 Unknown alkane 634 1 Unknown alkane 644 1 Unknown alkane 644 1 Unknown alkane 649 2 Unknown alkane			280				Total designation of the	י כ
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			649	2			Hebrania alkane	π

C-RMA-PH11/367HTB4.WK1

Table 36-7-11-4. Tentative identification of Nontarget Compounds in Site 36-7 Phase Il Soil Samples (page 2 of 4)

Comments	ס ט	ם מט יי יי	oo	o o → →	. م م م أ,
Best Fit	Methylhexanone Dibutyl nonanedioate Methylhexanone Dibutyl nonanedioate	Trichlorobenzenamine Junipene Unknown alkane Phenylethylphenol Unknown Methylsulfonyldinitrodipropylbenzenamine Unknown Methylbensenamine Unknown Methylbensenamine Dibutyl nonanedioate	Hexamethylcyclotrisiloxane Methylhexanone Methylhexanone Hexamethylcyclotrisiloxane Methylhexanone Unknown	Unknown alkane 2-Ethylhexyldiphenyl phosphonate Unknown Unknown Trichlorophenol Ethylhexyl trichlorophenoxyethanoate Ethylhexyl trichlorophenoxyethanoate	Hexamethy cyclotrisiloxane Methylhexanone Nonanoic acid Dodecanoic acid Dibutyl nonanedioate
Lot	-	K X X	K K K K K K K K K K K K K K K K K K K	KXG X	KZQ KXG
Sample Number	36-7-47X10 36-7-47X12	36-7-47X13	36-7-47X15 36-7-47X18 36-7-47X19	36-7-47X17 36-7-47X103	36-7-47x104
Concentration Above Background (ppm)*	3 0 0	2 2 2	3 10 20 0.8 10	0.8 0.8 8 8 40 10 40 40 20 20 600 100	2996.0
Unknown Number	526 614 526 614	576 577 594 602 629 630 636 637 637 637	160 526 526 160 526 555 555	600 630 550 554 572 627 628 630 631 633 633	160 160 524 566 586 614
Interval Depth (ft)	10-11	10-11	14-15	9-10	13-14
Boring		3686	3687	3988	

C-RMA-PHI1/367HTB4.WK1

Table 36-7-11-4. Tentative Identification of Nontarget Compounds in Site 36-7 Phase II Soil Samples (page 3 of 4)

Comments	ה אים הם היי ה	o a - o - o o c	d.f.	כי ס		ם ס מ ה ה ה ה	ָם ָם הַ אַ דָּ	ر _, م د
Best Fit	Dihydroacenaphthylene Unknown Pyrene Phenylnaphthalene Unknown alkane Unknown alkane Triphenylene	Unknown alkane Methyl hexanone Methylsulfonyldinitrodipropylbenzenamine Hexamethyltrisiloxane Methylhexanone Whknown Dibutyl nonanedioate Bis (2-ethylhexyl) phthalate	Heptanoic acid Trichlorobenzenenmamine Unknown alkane Unknown alkane Unknown alkane	uhknown alkane Methylhexanone Methylhexanone Dibutylnonanedioate	Methylhexanone	Tetrachloroethene Methylhexanone Nonanoic acid Dodecanoic acid Unknown alkane Methylhexanone	Methylhexanone Unknown Butyl octadecanoate Unknown Methylhexanone	Bis (2-ethylhexyl) phthalate Bis (2-ethylhexyl) phthalate
Lot	KET	K X 6 K X 6	KET	KXG KXG	KX	XX XX	ž ž	$\tilde{\Sigma}\tilde{\Sigma}$
Sample Number	36-7-47X21	36-7-47X22 36-7-47X23	36-7-47X25	36-7-47X26 36-7-47X27	36-7-47X29	36-7-47×41	36-7-47X49 36-7-47X50	36-7-47X53 36-7-47X54
Concentration Above Background (ppm)*	4 - 2 - 0	. 1 9 3 2 0 0 . 9 3 3 2 0 0 . 9 3 3 2 2 0 3 3 3 2 3 3 3 3 3 3 3 3 3 3 3	0.9 7 7 6.9 8.3	2 9 9.0	6	9.0 0.8 0.7 8.0 8	0.0 9.0 9.0 0.8	0.8
Unknown Number	582 598 617 618 624 628 632 633	640 524 632 161 524 541 614 636	551 576 578 591 594 595	524 524 524 615	526	518 524 566 586 661 524	526 619 628 633 526	635
Interval Depth (ft)	3-8	11-12	4-5	10-11	1-0	1-0 -4	0-1	0-1
Boring I	3689		3690		3691	3694	9698	3697

C-RMA-PHI1/367HTB4. WK1

Table 36-7-11-4. Tentative Identification of Nontarget Compounds in Site 36-7 Phase II Soil Samples (page 4 of 4)

Comments	م م رم م	U	⇔ no no	υ	د ً ل	טס	ب ب ب ن ن ن ش ش	, i o	ر د و د
Best Fit	Methylhexanone Unknown Nonanoic acid Dodecanoic acid	Methylhexanone Bis (2-ethylhexyl) phthalate	Oxabicycloheptane Unknown Methylsulfonyldinitrodipropylbenzenamine Unknown	Bis (2-ethylhexyl) phtha!ate	Bis (2-ethylhexyl) phthalate	Dibutyl nonanedioate Bis (2-ethylhexyl) phthalate	Methylhexanone Hexamethyltrisiloxane Unknown phthalate Unknown phthalate Bis (2-ethylhexyl) phthalate	Bis (2-ethylhexyl) phthalate Hexamethyltrisiloxane Bis (2-ethylhexyl) phthalate	Bis (2-ethylhexyl) phthalate Dioctyl hexamedioate Dibutyl nonamedioate
Lot	KXG	KXC KXG	KXC	KXC	KXC	KXC	KXC KZN KXF	KXF KZN KXF	KXE
Sample Number	36-7-47X57	36-7-47X58 36-7-47X65	36-7-47X7!	36-7-47X73	36-7-47X75	36-7-47X77	36-7-47X79 36-7-47X81	36-7-47x85 36-7-47x86	36-7-47X89 36-7-47X91
Concentration Above Background (ppm)*	9 0.8 1 0.9	ω –	0.9 3 5	2	6.0		6.0 8.0 4	0.8	8 8 6. 0
Unknown Number	524 558 566 566 586	524	523 616 632 673	989	637	615	524 160 625 628 636	636 160 636	630 636 615
Interval Depth (ft)	1-0	4-5	-0	0-1	1-0	1-0	0-1 9-10	4-5 9-10	9-10
Boring In Number	3698	3700	3703	3704	3705	3706	3707	3708	3709

* Values reported are method blank corrected.

+ a. No positive identification.

b. Surfactant.

c. Plasticizer (Note: All phthalates and adipates will have this comment).

d. Derived from natural products.

e. Suspected laboratory contaminant.

f. Low concentration.

g. Low frequency of occurrence.

h. Ubiquitous.

i. Possible column bleed.

j. None detected.

Source: ESE, 1988.

Nontarget compounds were detected in 42 of the 56 samples analyzed by GC/MS. Methyl hexanone was tentatively identified in 23 samples from Lots KXI, KXG, and KXC at concentrations ranging from 1 to 20 ppm. Hexamethyltrisiloxane, which was identified in 7 of 11 samples analyzed by GC/MS for VO compounds, is associated with column bleed during laboratory procedures.

Trichlorobenzenamine and methylsulfonyldinitrodipropylbenzenamine were each tentatively identified in three samples. The grab sample (6 to 7 ft) from Boring 3686 contained phenyethylphenol (2 ppm) and junipene (1 ppm) in addition to trichlorobenzene and methylsulfonyldinitrodipropylbenzenamine. Boring 3688 (9 to 10 ft) contained trichlorophenol and ethylhexyl trichlorophenoxy-ethanoate at elevated concentrations ranging from 10 to 600 ppm. Pyrene, triphenylene, and two naphthalenes were discovered in Boring 3689 (3 to 4 ft). The remaining comounds were predominantly naturally occurring compounds, phthalates, or could not be conclusively identified.

Results of the Phase II sampling program at Site 36-7 will be included as part of the overall analysis of the Central Study Area Report.

5.0 REFERENCES

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Arsenal.

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Environmental Science and Engineering, Inc. (ESE). 1988. Final Phase I Contamination Assessment Report, Site 36-7: Solid Waste Burial/Sanitary Pit (Task 1, Section 36). Prepared for Office of the Manager, Rocky Mountain Arsenal.

PHASE I ANALYTES AND CERTIFIED METHODS

Analytes/Methods	Synonymous Namesand_Abbreviations	Standard Abbreviations
VOLATILE ORGANIC COMPOUNDS/GCMS	VOL	VO
1,1-Dichloroethane	1,1-Dichloroethane	11DCLE
1,2-Dichloroethane	1,2-Dichloroethane	12DCLE
1,1,1-Trichloroethane (TCA)	1,1,1-Trichloroethane	111TCE
1,1,2-Trichloroethane	1,1,2-Trichloroethane	112TCE
Benzene	Benzene	C6H6
Bicycloheptadiene	Bicycloheptadiene (BCHD)	BCHPD
Carbon tetrachloride	Carbon tetrachloride	CCL ₄
Chlorobenzene	Chlorobenzene	CLC ₆ H ₅
Chloroform	Chloroform	CHCL ₃
Dibromochloropropane	Dibromochloropropane	DBCP
Dicyclopentadiene	Dicyclopentadiene	DCPD
Dimethyldisulfide	Dimethyldisulfide	DMDS
Ethylbenzene	Ethylbenzene	ETC ₆ H ₅
m-Xylene	meta-Xylene	13DMB
Methylene chloride	Methylene chloride	CH ₂ CL ₂
Methylisobutyl ketone	Methylisobutyl ketone	MIBK
o,p-Xylene	ortho- and/or para-Xylene	XYLEN
Tetrachloroethene (PCE)	Tetrachloroethylene	TCLEE
Toluene	Toluene	MEC ₆ H ₅
Trans 1,2-dichloroethene	Trans 1,2-dichloroethylene	12DCE
Trichloroethene (TCE)	Trichloroethylene	TRCLE
SEMIVOLATILE ORGANIC COMPOUNDS/GCMS	EXTRACTABLE ORGANIC COMPOUNDS (EX)	
1,4-Oxathiane	1,4-Oxathiane	OXAT
2,2-Bis (para-chlorophenyl)-		
1,1-dichloroethane	Dichlorodiphenylethane	PPDDE
<pre>2,2-Bis (para-chlorophenyl)</pre>		
1,1,1-trichloroethane	Dichlorodiphenyltrichloroethane	PPDDT
Aldrin	Aldrin	ALDRN
Atrazine	Atrazine	ATZ
Chlordane	Chlordane	CLDAN
Chlorophenylmethyl sulfide	p-Chlorophenylmethyl sulfide	CPMS
Chlorophenylmethyl sulfoxide	p-Chlorophenylmethyl sulfoxide	CPMSO
Chlorophenylmethyl sulfone	p-Chlorophenylmethyl sulfone	CPMSO ₂
Dibromochloropropane	Dibromochloropropane	DBCP
Dicyclopentadiene	Dicyclopentadiene	DCPD
Dieldrin	Dieldrin	DLDRN
Diisopropylmethyl phosphonate	Diisopropylmethyl phosphonate	DIMP

Analytes/Methods	Synonymous Namesand_Abbreviations	Standard Abbreviations
SEMIVOLATILE ORGANIC COMPOUNDS (CONT)		
Dimethylmethyl phosphonate	Dimethylmethyl phosphonate	DMMP
Dithiane	Dithiane	DITH
Endrin	Endrin	ENDRN
Hexachlorocyclopentadiene	Hexachlorocyclopentadiene (HCPD)	CL ₆ CP
Isodrin	Isodrin	ISODR
Malathion	Malathion	MLTHN
Parathion	Parathion	PRTHN
Supona	<pre>2-Chloro-1(2,4-dichlorophenyl) vinyldiethyl phosphate</pre>	SUPONA
Vapona	Vapona	DDVP
METALS/ICP	ICAP	ICP
Cadmium	Cadmium	CD
Chromium	Chromium	CR
Copper	Copper	CU
Lead	Lead	PB
Zinc	Zinc	ZN
SEPARATE ANALYSES		
Arsenic/AA	Arsenic	AS
Mercury/AA	Mercury	HG
Dibromochloropropane/GC	Dibromochloropropane	DBCP

PHASE II ANALYTES AND CERTIFIED METHODS

Analytes/Methods	Synonymous Namesand_Abbreviations	Standard Abbreviations
VOLATILE ORGANIC COMPOUNDS/GCMS (Same as Phase I)	VOL	vo
SEMIVOLATILE ORGANIC COMPOUNDS/GCMS (Same as Phase I)	EXTRACTABLE ORGANIC COMPOUNDS (EX	() SVO
VOLATILE HALOCARBON COMPOUNDS/GCCON	PURGEABLE HALOCARBONS (PHC)	VHO
1,1-Dichloroethane	1,1-Dichloroethane	11DCLE
1,2-Dichloroethane	1,2-Dichloroethane	12DCLE
1,1-Dichloroethene	1,1-Dichloroethene	11DCE
1,1,1-Trichloroethane (TCA)	1,1,1-Trichloroethane	111TCE
1,1,2-Trichloroethane	1,1,2-Trichloroethane	112TCE
Carbon tetrachloride	Carbon tetrachloride	CCL ₄
Chlorobenzene	Chlorobenzene	CLC ₆ H ₅
Chloroform	Chloroform	CHCL3
Methylene chloride	Methylene chloride	CH ₂ CL ₂
Trans 1,2-dichloroethylene	Trans 1,2-dichloroethene	12DCE
Tetrachloroethene (PCE)	Tetrachloroethylene	TCLEE
Trichloroethene (TCE)	Trichloroethylene	TRCLE
VOLATILE HYDROCARBON COMPOUNDS/GCFID	DCPD	HYDCBN
Bicycloheptadiene	Bicycloheptadiene (BCHD)	BCHPD
Dicyclopentadiene	Dicyclopentadiene	DCPD
Methylisobutyl ketone	Methylisobutyl ketone	MIBK
VOLATILE AROMATIC COMPOUNDS/GCPID	PURGEABLE AROMATICS (PAM)	VAO
Benzene	Benzene	C ₆ H ₆
Ethylbenzene	Ethylbenzene	ETC ₆ H ₅
m-Xylene	meta-Xylene	13DMB
o,p-Xylene	ortho- and/or para-Xylene	XYLEN
Toluene	Toluene	MEC ₆ H ₅
ORGANOCHLORINE PESTICIDES/GCEC 2,2-Bis (para-chlorophenyl)-		OCP .
1,1-dichloroethane 2,2-Bis (para-chlorophenyl)-	Dichlorodiphenylethane	PPDDE
1,1,1-trichloreoethane	Dichlorodiphenyltrichloroethane	PPDDT
Aldrin	Aldrin	ALDRN
Chlordane	Chlordane	CLDAN
Dieldrin	Dieldrin	DLDRN
Endrin	Endrin	ENDRN
Hexachlorocyclopentadiene	Hexachlorocyclopentadiene	CL6CP
Isodrin	Isodrin	ISODR
TPOGLIU	TOOTLEH	

Analytes/Methods	Synonymous Namesand_Abbreviations	Standard Abbreviations
ORGANOPHOSPHOROUS PESTICIDES/GCNPD	ORGANOPHOSPHOROUS COMPOUNDS (OPC)	OPP
Atrazine	Atrazine	ATZ
Malathion	Malathion	MLTHN
Parathion	Parathion	PRTHN
Supona	<pre>2-Chloro-1(2,4-dichlorophenyl) vinyldiethyl phosphate</pre>	SUPONA
Vapona	Vapona	DDVP
ORGANOPHOSPHOROUS COMPOUNDS/GCFPD	DIMP	OPC
Diisopropylmethyl phosphonate	Diisopropylmethyl phosphonate	DIMP
Dimethylmethyl phosphonate	Dimethylmethyl phosphonate	DMMP
ORGANOSULPHUR COMPOUNDS/GCFPD		osc
1,4-Oxathiane	1,4-Oxathiane	OXAT
Benzothiazole	Benzothiazole	BTZ
Chlorophenylmethyl sulfide	p-Chlorophenylmethyl sulfide	CPMS
Chlorophenylmethyl sulfone	p-Chlorophenylmethyl sulfone	CPMSO ₂
Chlorophenylmethyl sulfoxide	p-Chlorophenylmethyl sulfoxide	CPMSO
Dimethyldisulfide	Dimethyldisulfide	DMDS
Dithiane	Dithiane	DITH
METALS/ICP	ICAP	ICP
Cadmium	Cadmium	CD
Chromium	Chromium	CR
Copper	Copper	CU
Lead	Lead	PB
Zinc	Zinc	ZN
SEPARATE ANALYSES		
Arsenic/AA	Arsenic	AS
Mercury/AA	Mercury	HG
Dibromochloropropane/GC	Dibromochloropropane	DBCP

$\begin{array}{c} \text{APPENDIX } 36\text{--}7\text{--}\text{II-A} \\ \text{CHEMICAL NAMES, METHODS, AND ABBREVIATIONS} \end{array}$

Analytes/Methods	Synonymous Namesand_Abbreviations	Standard Abbreviations
ARMY AGENT DEGRADATION PRODUCTS:		ADP
AGENT PRODUCTS/HPLC Chloroacetic Acid Thiodiglycol	TDGCL Chloroacetic acid Thiodiglycol (TDG)	CLC2A TDGCL
AGENT PRODUCTS/IONCHROM Fluoroacetic acid Isopropylmethylphosphonic acid Methylphosphonic acid	IMPA Fluoroacetic acid Isopropylmethylphosphonate Methylphosphonate	GBDP FC2A IMPA MPA

Methods	Abbreviations
Atomic Absorption Spectroscopy Gas Chromatography/Conductivity Detector	AA GCCON GCEC
Gas Chromatography/Electron Capture Gas Chromatography/Flame Ionization Detector Gas Chromatography/Flame Photometric	GCFID GCFPD
Gas Chromatography/Mass Spectrometry Gas Chromatography/Nitrogen Phosphorous Detector	GCMS GCNPD
Gas Chromatography/Photoionizaton Detector High Performance Liquid Chromatography Inductively Coupled Argon Plasma Ion Chromatography	GCPID HPLC ICP, ICAP IONCHROM

APPENDIX 36-7-II-B PHASE II CHEMICAL DATA

06/24/88 PROJECT NAME RHA TASN 47/1 PROJECT MANAGER BILL FRASER LAB COORDINATOR JOE VONDRICK ENVIRONMENTAL SCIENCE & ENGINEERING PROJECT NUMBER 88425 00C0 FIELD GROUP 36-7-47 ALL

3689GRAB 36-7-47 21 02/03/88 S 0 <1.5 (0.25 CSDT G œ <7.16 21.4 252 <4.70 <0.73 <0.35 <0.29 <0.33 <0.29 8 0.105 <0.94 <0.26 <0.37 <0.921 80. 9 3687B 36-7-47 03/14/88 S BORE <7.16 34.4 <4.70 <0.73 <0.25 <0.35 <0.29 <0.33 <0.29 2 ď <0.921 0.063 <0.94 26 <0.37 < 16. έ. 0 3687A 36-7-47 03/14/88 09:40 <7.16 27.0 <1.5 S 58.2 <4.70 <0.050 <0.73 <0.33 <0.94 35 26 æ <0.921 <16. 6 0. 02/03/8E 12:48 c 13.0 15.0 17.1 œ 0.303 <0.73 <.!> <0.33 3688CRA5 SO 100 83 35 36-7-47 á <0.921 94 < 16. 9 0 6 9 0. 0 9 3686B 36-7-47 03/14/88 20.7 54.7 47.16 9.6 <1.5 S <4.70 <0.25 35 <0.33 <0.26 4 <0.921 050 <0.94 쪿 < 16. 0. 3686A 36-7-47 03/14/88 <7.16 <0.73 <4.70 <0.33 S 2 5.7 <0.921 <0.94 <0.25 35 53 <0.26 <0.29 ž 37 ~ <16. 70. 8 9 6 3686CRAB 36-7-47 02/02/88 S 3,3 5 <4.70 <0.73 (0.33 <0.29 풒 17.7 020 <0.94 25 35 29 26 <0.37 CSDT 921 < 16. ė. 3685X 36-7-47 12 03/15/88 22.2 <7.16 84.7 <0.73 S <4.70 <0.050 BORE ž <0.921 <0.94 <0.25 <0.35 29 33 <0.26 23 <0.37 <16. 6 e. #/Q! 3685A 36-7-47 10 03/15/88 09:20 S 9 25.4 <7.16 35.0 8.91> 64.9 <4.70 .075 <0.73 \$. 5 <0.25 BORE <0.921 <0.94 <0.33 <0.26 <0.29 æ 3685CRAB 36-7-47 02/02/88 σ 1.28 32.9 \$. |-|-S 0 **8**K0 61.4 6.97 1.67 <0.94 (0.73 CSDT (0.25 (0.35 (0.29 (0.37 167 0.71 33 . 26 9 3684B 36-7-47 03/16/88 21.7 51.3 <7.16 416.8 87.3 <0.73 <. I > S BORE <4.70 <0.050 <0.94 <0.25 (0.35 <0.921 <0.29 (0.29 <0.37 4 X .33 26 03/16/88 08:43 3684A 36-7-47 13.5 9.48 22.9 S 9 <4.70 <0.94 <0.73 <0.25 <0.35 <0.29 <0.33 <0.29 ₹ . 26 <0.37 <0.921 48. 48. 9 02/03/88 12:10 3684GRAB 36-7-47 CSDT 0 Ö 6.91 24.7 41.8 75.6 7.45 0.110 <0.73 <!: 5 <0.35 8 25 <0.29 ₩ 12.1 <0.921 4 <0.29 <0.37 33 0. 6 0. 03/15/88 3683B 36-7-47 23.8 S BORE σ S <0.921 <7.16 œ S <4.70 94 <0.73 25 <0.35 29 33 똢 050 29 37 25 26 < 16. 70. 6 0. 0 6. ô 6 6 6 3683A 36-7-47 03/15/88 <0.73 င္ပ <4.70 <0.29 25 쑮 <0.921 .050 94 35 33 26 29 37 25 34. 66. ô. 1043 R9 1052 R9 1093 R9 1003 STORET # 71999 0 99759 72005 1028 R9 99584 R9 98356 09 98655 09 09 98653 09 98654 09 6 98703 09 98652 09 98651 98363 09 98364 09 98365 6 98361 DRY DRYDR. SAMPLING TECHNIQUE UG/G-DRY UG/C-DRY P-CLPHENYLMETHY-SULFIDE UG/G-DRY UG/G-DRY UG/G-DRY UG/G-DRY UG/G-DRY P-CLPHENYLMETHY-SULFOXIDE UG/G-DRY UG/G-DRY UG/G-DRY DICYCLOPENTADIENE UG/G-DRY Ξ UG/G-DR) VG/C-DRY SAMPLE SULFOXIDE UG/G-DF P-CLPHENYLMETHY-UNITS -9/90 -9/90 -9/9N %WET DBCP (NEMAGON) INSTALLATION SAMPLE DEPTH SAMPLE TYPE TYPE CHLORDANE MOISTURE CHROMIUM ATRAZINE CADMIUM ARSENIC SULFONE MERCURY ALDRIN 4 COPPER а. SITE DATE LE AD ZINC 501 DDE,

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ENVIRONMENTAL SCIENCE & ENCINCERING PROJECT NUMBER 88425 0000 FIELD GROUP 36-7-47 ALL

06/24/88
PROJECT NAME RMA TASK 47/1
PROJECT MANAGER BILL FRASER
LAB COORDINATOH JOE VONDRICK

PAGE#2

36890RAB 36-7-47 21	02/03/89 10:16	<0.50	<0.25	<1.5	<0.70		<0.33	(0.59	<0.26	<0.63	<0.43	<0.25															
3687B 36-7-47	03/14/88	<0.50	<0.25	<1.5	<0.70	 	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25	<6.27	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25		<0.25	<0.25	<0.50	<0.25	<0.25	
36874 36-7-47 18	03/14/86	<0.59	<0.25	\$	<0.70	4.1.	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
36866AB 36-7-47	02/03/88 12:48	<0.50	<0.25	<1.5	<0.70	. 1 . 1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
36866 36-7-47 15	03/14/86	<0.50	<0.25	<1.5	<0.70	41.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25	<0.27	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25		<0.25	<0.25	<0.50	<0.25	<0.25	
3686A 36-7-47	03/14/88 09:54	<0.50	<0.25	<1.5	<0.70	<u></u>	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
3686CRAB 36-7-47	02/02/88 10:57	<0.50	<0.25	<	<0.70	1.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
3685X 36-7-47 12	03/15/88	<0.50	<0.25	<1.5	<0.70	>	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25	<0.27	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25		<0.25	<0.25	<0.50	<0.25	<0.25	
SAMPLE 3685A 36-7-47	03/15/88	<0.50	<0.25	<1.5	<0.70	4.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
3685GRAB 36-7-47	02/02/88 12:22	<0.50	<0.25	<1.5	<0.70	4.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25												٠			
3694B 36-7-47	03/16/88 08:54	<0.50	<0.25	<1.5	<0.70	÷	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25	<0.27	<0.25	<0.25	0.97	<0.25	<0.25	<0.25	70.05		<0.25	<0.25	<0.50	<0.25	<0.25	
3684A 36-7-47	03/16/88 08:43	<0.50	<0.25	<1.5	<0.70	4.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25												•			
3684GRAB 36-7-47 5	02/03/88 12:10	<0.50	<0.25	<1.5	1.4	2	0.53	<0.59	<0.26	<0.63	<0.49	<0.25															
3663B 36-7-47	03/15/88	<0.50	<0.25	<1.5	<0.70	1.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25		<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	70 25		<0.25	<0.25	<0.50	<0.25	<0.25	
3683A 36-7-47 2	03/15/88	<0.50	<0.25	<1.5	<0.70	\ -:->	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
STORET #		98645	98650	98657	983	- 986	986	98648	98644	98658	98656	98646	98651	H9 T 98687	986	68986 68	06986 6M	16986	98692	6469	611	98694	98698	96986	98697	66986	6 x
P.P.RAMETERS UNITS	DATE TIME	DIMP	UG/G-DRY	DMMP UG/G-DKT	UG/G-DRY ENDRIN	UG/G-DRY. HEXACHLOROCYCLOPENT	ADIENE UG/G-DRY ISODRIN	UG/G-DRY MALATHION	UG/G-DRY 1,4 OXATHIANE	UG/G-DRY ETY'PARATHION	UG/G-DRY SUPONA	UG/G-DRY	UG/G-DRY	-1.2-	HENE UG/G-DRY ETHYLBENZENE	UG/G-DRY METHYLENE CHLORIDE	UG/G-DRY TETRACHLOROETHENE	116/6-DRY	JG/G-DRY	ETHANE UG/G-DRY	ETHANE UG/G-DRY	TRICHLOROETHENE	M-XYLENE	M18K	06/6-041 DMDS	UG/G-DRY BENZENE	UG/G-0RY

PACE#4 06/24/88 PROJECT NAME RMA TASh 47/1 PROJECT MANAGER BILL FRASER LAB COGRDINATOR JOE VONDRICH ENVIRONMENTAL SCIENCE & ENGINEERING PROJECT NUMBER 88425 0000 FIELD GROUP. 36-7-47 ALL

36.89CRAB 36-7-47 02:03/88 6.0 0. 0.8 3687b 36-7-47 19 03/14/88 0.8 3667A 36-7-47 03/14 88 09:40 02/03/88 3686CRAB 36-7-47 8.0 3686B 36-7-47 03/14/88 3686A 36-7-47 03/14/88 3686CRAB 36-7-47 02/02/88 3685X 36-7-47 12 03/15/88 3685A 36 36-7-47 36-7 03/15/88 09:20 02/02/88 0. 3685CRAB 36-7-47 6.0 0.1 2 9 03/16/88 08:54 3684B 36-7-47 ø. 2 3684A 36-7-47 6.0 6.0 08:43 9.0 03/16/88 02/03/88 3684GRAB 36-7-47 3683B 36-7-47 03/15/88 03/15/28 08:19 3683A 36-7-47 STORET # 90576 90578 90578 90629 90624 90628 90638 90638 90636 90636 90644 90649 90655 90655 90609 90618 90619 90619 90626 90631 09 90633 90160 99 90615 09 90543 09 90559 90573 90906 UNITS 9/90 9/90 9/90 9/90 9/90 0/90 0/00 9/90 9/90 9/90 9/90 9/90 9/90 9/90 0/9n 9/90 9/90 0/00 9/90 PARAMETERS UNK 578 **UNK576** UNK 636 UNK 160 UNK 559 UNK 624 **UNK 632** UNK644 UNK 649 UNK 600 UNK633 UNK 615 **UNK622 UNK 628** UNK 640 UNK 609 **UNK618** UNK 619 UNN 626 **UNK543 UNK573 UNK634** UNK63! DATE

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UNK 655

ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88
PROJECT NUMBER 88425 0000 PROJECT NAME RHA TASN 47/1
FIELD GROUP 36-7-47 , PROJECT MANAGER BILL FRASER
ALL LAB CCORDINATOR JOE VONDRICK

3689CPAB 36-7-47 21	02,03788							4	2																_
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36868 36-7-47 15	03/14/86																							10	
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3685X 3685X 36-7-47	03/15/88																							0_	м
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3684A 36-7-47	03/16/88 08:43																								
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3683A 36-7-47	03/15/68																							10	m
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PARAMETERS	DATE TIME	UNK577	UNK 629	UNK 630	UNK 637	UNK 555	UNK 556	UNK 582	UNK 617	UNK 161	1 XX XX 1	N N N N N N N N N N N N N N N N N N N	UNKS91	UNK 595	012/300	UNK K K I	INK ROA		0 0 0 0	UNK 673	UNK 550	UNK572	UNK 627	UNK 526	UNK 6 14

PAGE#6			
06/24/88	PROJECT NAME RMA TASK 4771	PROJECT MANAGER BILL FRASER	LAB COORDINATOR JOE VONDRICK
ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88	PROJECT NUMBER 88425 0000	F 1ELD GROUP 36-7-47	ALL

ARAMETERS Units	STORET # METHOD	3683A 36-7-47	36838 36-7-47 3	3684GRAB 36-7-47 5	3684A 36-7-47	3684B 36-7-47	3685CRAB 36-7-47 9	3685A 3685A 36-7-47	10/# 3685X 36-7-47 12	36866RAB 36-7-47	3686A 36-7-47	3686B 36-7-47	36886848 36-7-47	36-7-47 36-7-47	3657B 36-7-47	36-96RAB 36-7-47
		03/15/88	03/15/88	03/15/88 03/15/88 02/03/88 08:19 08:33 12:10	03/16/88 08:43	03/16/88 08:54	02/02/88 12:22	03/15/88 09:20	03/15/88	02/02/88 10:57	03/14/88 09:54	03/14/88	02/03/8E 12:48	03.14.88	03/14/88 12:03	02703785 10:16
9/911	90635		0.2													

CNVIRONMENTAL SCIENCE & ENGINEERING 06/24/88 PROJECT NUMBER 88425 0000 PROJECT NAME RHA TASK 47/1 FIELD GROUP 36-7-47 PROJECT MANAGER BILL FRASER ALL LAB COORDINATOR JOE VONDRICK

PACE#7

<1.5 <0.25 <0.35 <0.29 <0.33 <0.29 <0.25 03/15/88 <4.70 <0.73 26 <0.37 13.6 17.6 12.9 8.91> 55.6 <0.94 3695A 36-7-47 ت S 050.00 EORE á <0.921 0 03/16/86 <0.25 <0.35 <0.25 3694B 36-7-47 <0.73 <0.37 5.5 8.95 œ 32.6 <4.70 050,050 <0.94 29 C 35 29 SS BORE æ <0.921 < 16. 0, 0, 9 <1.5 <0.37 <0.25 <0.25 03/16/88 15.2 <0.050 3 26 29 3694A 36-7-47 0. = <0.94 S 9.1 <0.921 3 숲 --<0.73 <...> <0.25 <0.35 <0.29 03/10/88 36935 36-7-47 26 94 S £ 8.5 12.2 13.1 50.4 <0.050 BORE <0.921 <16. . 0 0, 6 0, ô. \$. :5 3693A 36-7-47 03/10/88 <4.70 <0.73 <0.25 33 29 37 <0.25 12.9 <7.16 32.3 <0.94 29 86 œ 26 050.00 S ď BORE <0.921 < 16. 6. 0. 9 0. 0. ė. <0.73 <0.25 03/10/88 8.91> 34.8 <1.5 <0.25 <0.29 33 53 <0.37 <7.16 8.80 <4.70 <0.94 35 26 050.00 8 쏬 <0.921 0. ô. 9 9 <0.25 03/10/88 <4.70 <0.94 <0.73 <1.5 <0.25 <0.35 <0.29 <0.37 0. <7.16 8.33 œ 9 <0.29 33 26 <0.921 050.00 20 뚪 ć 16. <0.25 3691B 36-7-47 30 03/15/88 8.91> 40.9 <4.70 <0.050 <0.73 <1.5 3.6 33 56 <0.29 <0.37 25 <0.94 29 8.1 12.4 S BORE ₹ 921 6 ŝ. 9 ė. #/0| 3691A 36-7-47 29 44.0 <u>...</u> <0.25 (0.29 <0.37 9.1 03/15/88 <16.8 <0.050 <0.73 29 56 9.6 <0.921 94 20 € BORE 2 ≘ ô. 6 <1.5 <0.37 <0.25 03/16/88 12.0 14.8 8.91> 57.0 <0.73 <0.25 <0.35 26 23 3690B 36-7-47 <0.921 <4.70 050.00 <0.94 29 33 16.1 S BORE 7 * ė, ê ô ė, 03/16/88 8.91> <4.70 <0.94 <0.73 <1.5 <0.25 <0.35 <0.33 (0.29 <0.37 3690A 36-7-47 26 9.39 <0.050 29 56 25 S 0 13.4 € BORE <0.921 39. ö. ô. 0, ê. 3690GRAB 36-7-47 25 <u>...</u> <0.25 02/03/88 9.61 21.5 69.9 <0.050 <0.73 <0.25 <0.35 <0.29 <0.29 <0.37 0.01 17.2 <0.94 33 . 26 150 S ₩. <0.921 CSDT 8 e. 03/16/88 9.92 <16.8 <0.73 <!-- S <0.25 <0.35 <0.33 <0.29 <0.25 3689B 36-7-47 2 14.0 6. 'n <4.70 <0.94 .5 26 <0.37 <0.050 S <0.921 쏬 BORE 16. 56. 6 14.0 <0.94 <0.73 <.!> <0.25 <0.35 25 416.8 0 <4.70 33 53 37 3689A 36-7-47 10:43 S 6 13.0 26 03/16/88 S BORE * <0.921 48. 16. 6 0. 0.0 6 0. <1.5 3689GRAB 36-7-47 <0.73 25 10:16 0 ن 8 9 <4.70 0.105 <0.94 <0.25 (T) 26 6 02/03/88 9 S 8 921 9 80 0, 00 98361 09 98653 09 98654 98703 98652 09 98651 98363 09 98364 98365 98365 STORET # 1093 R9 1003 T9 71921 V9 98356 09 98655 71999 1028 R9 99584 R9 89 72005 1043 8 1052 DRΥ DR. á P-CLPHENYLMETHY-SULFIDE UG/G-DRY /G-DRY UG /G-DRY UG/G-DRY UG/G-DRY UC/C-DRY UG/G-DRY UG/G-DRY UG/G-DRY CYCLOPENTADIENE UG/G-DRY UG/G-DRY UG/G-DEY SAMPLING TECHNIQUE UC/C-DRY UG/G-DRY UG/G-DR) INSTALLATION CODE SAMPLE MHET HT P-CLPHENYLMETHY-P-CL PHENYLMETHY--9/9N -9/90 -9/90 UNITS DECP (NEMAGON) SAMPLE DEPTH SAMPLE TYPE PARAMETERS SULFOXIDE SITE TYPE CHLORDANE DIELDRIN CHROMIUM ATRAZINE MOISTURE SULFONE PP 1 ARSENIC ME RCURY CADMIUM DDE . FP . ALDP.IN COPPER DATE LEAD 21NC

06/24/88 PROJECT NAME RHA TASK 47/1 PROJECT MANAGER BILL FRASER LAB COORDINATOR JOE VONDRICN ENVIRONMENTAL SCIENCE & ENGINEERING PROJECT NUMBER 88425 0000 FIELD GROUP 36-7-47

PACE#B

3695A 36-7-47	03/15/58	<0.50	<0.25	<1.5	<0.70	·.:>	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
3694B 36-7-47 36	60 - 83, 9 1780	<0.50	<0.25	<1.5	<0.70	1.15	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
36944 36-7-47 41	03/16/88 03 13:07	<0.50	<0.25	<1.5	<0.70	1.1>	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
36938 36-7-47 38	03/10/88 03 12:03	<0.50	<0.25	<1.5	<0.70	<1.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
36934 36-7-47 37	03/10/88 0	<0.50	<0.25	<1.5	<0.70	<1.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
3692B 36-7-47 34	03/10/88	<0.50	<0.25	<1.5	<0.70	<u>-:</u>	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															•
3692A 36-7-47 33	03/10/88	<0.50	<0.25	<1.5	<0.70	41.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
36918 36918 36-7-47 30	03/15/88	<0.50	<0.25	<1.5	<0.70	-:- -:-	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
SAMPLE 1 3691A 36-7-47 29	03/15/88	<0.50	<0.25	<1.5	<0.70	4.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
36908 36-7-47 27	03/16/88	<0.50	<0.25	<1.5	<0.70	4.15	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25	<0.27	<0.25	20 25	67.00	0.69	<0.25	<0.25	<0.25	<0.25	<0.25		<0.25	<0.50	<0.25	<0.25
36-7-47 26-7-47	03/16/88	<0.50	<0.25	<1.5	<0.70	4.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
36900RAB 36-7-47 25	02/03/88	<0.50	<0.25	<1.5	<0.70	-:-	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25															
36898 36-7-47 23	03/16/88 10:55	<0.50	<0.25	<1.5	<0.70	÷	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25	<0.27	<0.25	<0.25	64.00	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	:	<0.25	<0.50	<0.25	<0.25
36894 36-7-47 22	03/16/88	<0.50	<0.25	<1.5	<0.70	<1.1	<0.33	<0.59	<0.2€	<0.63	<0.49	<0.25															
36896RAB 36-7-47 21	02/03/88	<0.50	<0.25	<1.5	<0.70	÷.	<0.33	<0,59	<0.26	<0.63	<0.49	<0.25															
STORET #		98645	98650	98657	98369	98647	98649	98648	98644	98658	98656	98646	98651	986	6M 6M	6H	98689	98690	16986	98692	98693	M9 98694	6H	56986 6M	96986	98697	98698 98698
P & RAMETERS UNITS	DATE TIME	01MP 116/6-08Y	1,4 DITHIANE	DMMP 16.76-DPY	ENDRIN UC/C-DRY	- -	z	MALATHION UG/G-DRY	1,4 OXATHIANE	ETY PARATHION	SUPONA 112.75 - DRY	VAPONA	UG/G-DRY DICYCLOPENTADIENE	5-1,2-	HENE UG/G-DRY ETHYLBENZENE	UG/G-DRY	METHYLENE CHLORIDE 11676-087	TETRACHLOROETHENE	TOLUENE US ZE-DRY	1, 1, 1-TRICHLORO-	1, 1, 2-TRICHLORO-	THANE UG/G-DRY RICHLOROETHENE	UG/G-DRY	M-XYLLNL UG/G-DRY	MIBK HGZG-08Y	DMDS 116/6-08X	SENZENE UG/G-DRY

PAGE#10 06/24/88 PROJECT NAME RHA YASK 47/1 PROJECT HANAGER BILL FRASER LAB COORDINATOR JOE VONDRICK ENVIRONMENTAL SCIENCE & ENGINEERING PROJECT NUMBER 88425 0000 FIELD GROUP 36-7-47

PARAHETERS Date Time	SUNITS		36890RAB 36-7-47 21 02/03/88	36-7-47 22 03/16/88	36-7-47 23-7-47 03/16/88	3690GRAB 36-7-47 25 02/03/88 11:22	36-7-47 36-7-47 26 03/16/88	36-7-47 27 03/16/88	SAMPLE 10/# 3691A 36-7-47 36-7-47 03/15/88 03/1	36-7-47 36-7-47 30 30 30 315/88	3692A 36-7-47 33 03/10/88	36928 36-7-47 34 03/10/88	3693A 36-7-47 37 03/10/88	3693B 36-7-47 38 38 03.710/88	36-7-47 36-7-47 41 03.16.88	36948 36-7-47 42 03/16/88	3695A 26-7-47 45 03/15/88
UNK 609 UNK 619 UNK 619	9/9n 9/9n 9/9n 9/9n	90600 90609 90609 90619 90619	0.8														
UNK631 UNK160 UNK543 UNK543	9/9n 9/9n 9/9n 9/9n	90631 90633 90633 90160 90615 90543 90543	6.0			٠.		6.9									
UNK573 UNK576 UNK578 UNK622	9/9n 9/9n 9/9n 9/9n	90573 09 09 0576 09 0578 90578 90622	0.1			. 9											
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UNK 655	9/90	60 60 80 80 80 80 80 80 80 80 80 80 80 80 80															

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PAGE#11 06/24/88
PROJECT NAME RHA TASN 47/1
PROJECT HANAGER BILL FRASER
LAB COORDINATOR JOE VONDRICK ENVIRONMENTAL SCIENCE & ENCINEERING PROJECT NUMBER 88425 0000 FIELD GROUP 36-7-47 ALL

PARAMETERS	S STORET # UNITS METHOD	36896RAE 36-7-47 21	3689A 36-7-47 22	3689B 36-7-47 23	3690CRAB 36-7-47 25	3690A 36-7-47 26	3690B 36-7-47 27	SAMPLE 10/# 3691A 3 36-7-47 36- 29	3691B 36-7-47 30	36-7-47 36-7-47 33	3692B 36-7-47 34	3693A 36-7-47 37	36935 36-7-47 38	3694A 36-7-47 41	36946 36-7-47	3695A 36-7-47 45
DATE TIME		02/03/88	03/16/68	03/16/88	02/03/88	03/16/88	03/16/88	03/15/88	03/15/88	03/10/88	03/10/88	03/10/88	03/10/88	03/16/88	.03/16/88	03/15/86
775 JUNI 211	7206															
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ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88
PROJECT NUMBER 88425 ONUO PROJECT NAME RMA TASN 47/1
FIELD GROUP 36-7-47 PROJECT MANAGER BILL FRASER
ALL LAB COGRDINATOR JOE VONDRICA

_	SAMPLE 1D/# 3691A 3692A 36-7-47 36-7-47 36-7-47 29 30 33 03/15/88 03/15/88	3690B 3691A 3691B 3692A 36-7-47 36-7-4	3690GRAB 3690A 3690B 3691A 3691B 3692A 36-7-47	3690GRAB 3690A 3690B 3691A 3691B 3692A 36-7-47	3690GRAB 3690A 3690B 3691A 3691B 3692A 36-7-47	3690GRAB 3690A 3690B 3691A 3691B 3692A 36-7-47	3690GRAB 3690A 3690B 3691A 3691B 3692A 36-7-47
36-7-47 36-7-47 30-30-03/15/88	SAHPLE 1D/# 3691A 3691B 36-7-47 36-7-47 29 30 03/15/88 03/15/88	3690B 3691A 3691B 36-7-47 36-7-47 36-7-47 27 29 30 03/16/88 03/15/88	3690GRAB 3690A 3690B 3691A 3691B 36-7-47 36-7-47 36-7-47 36-7-47 36-7-47 25 26 27 29 30 02/03/88 03/16/88 03/16/88 03/15/88	3690GRAB 3690A 3690B 3691A 3691B 36-7-47 36-7-47 36-7-47 36-7-47 36-7-47 25 26 27 29 30 02/03/88 03/16/88 03/16/88 03/15/88	3690GRAB 3690A 3690B 3691A 3691B 36-7-47 36-7-47 36-7-47 36-7-47 36-7-47 25 26 27 29 30 02/03/88 03/16/88 03/16/88 03/15/88	3690GRAB 3690A 3690B 3691A 3691B 36-7-47 36-7-47 36-7-47 36-7-47 36-7-47 25 26 27 29 30 02/03/88 03/16/88 03/16/88 03/15/88	SAMPLE 10/# 3689GRAB 3689GRAB 3690A 3690B 3691A 3691B 36-7-47
SAMPLE ID/# 3691A 3691B 36-7-47 36-7-47 29 30 03/15/88 03/15/88	3691A 3691A 36-7-47 29 03/15/88	3690B 3691A 36-7-47 36-7-47 27 29 03/16/88 03/15/88	3690GRAB 3690A 3690B 3691A 36-7-47 36-7-47 36-7-47 36-7-47 25 26 27 29 02/03/88 03/16/88 03/15/88	3690GRAB 3690A 3690B 3691A 36-7-47 36-7-47 36-7-47 36-7-47 25 26 27 29 02/03/88 03/16/88 03/15/88	3690GRAB 3690A 3690B 3691A 36-7-47 36-7-47 36-7-47 36-7-47 25 26 27 29 02/03/88 03/16/88 03/15/88	3690GRAB 3690A 3690B 3691A 36-7-47 36-7-47 36-7-47 36-7-47 25 26 27 29 02/03/88 03/16/88 03/16/88	3690FAB 3669A 3689B 3690GRAB 3690A 3690B 3691A 36-7-47
3691A 36-7-47 29 03/15/88	0	3690B 36-7-47 27 03/16/88 0	3690GRAB 3690A 3690B 36-7-47 36-7-47 36-7-47 25 26 02/03/88 03/16/88 03/16/88 0	36906RAB 3690A 3690B 36-7-47 36-7-47 36-7-47 25 .26 .27 02/03/88 03/16/88 03/16/88 0	36906RAB 3690A 3690B 36-7-47 36-7-47 36-7-47 25 .26 .27 02/03/88 03/16/88 03/16/88 0	3690CRAB 3690A 3690B 36-7-47 36-7-47 36-7-47 25 .26 .27 02/03/88 03/16/88 03/16/88 0	3690RAB 3669A 3689B 3690GRAB 3690A 3690B 3690B 36-7-47
	3690B 36-7-47 27 03/16/88		36906RAB 3690A 36-7-47 36-7-47 25 26 02/03/88 03/16/88	3690GRAB 3690A 36-7-47 36-7-47 25 .26 02/03/88 03/16/88	3690GRAB 3690A 36-7-47 36-7-47 25 .26 02/03/88 03/16/88	3694 3699B 3690CRAB 3690A 36-7-47 36-7-47 36-7-47 36-7-47 22 23 25 26 03/16/88 03/16/88 02/03/88 03/16/88	3690RAB 3689A 3689B 3690GRAB 3690A 36-7-47 36-7-47 36-7-47 36-7-47 21 22 23 23 25 25 26 02/03/88 03/16/88 03/16/88 02/03/88 03/16/88

PAGE#13 06/24/88 PROJECT NAME RMA TASA 47/1 PROJECT MANAGER BILL FRASER LAB COORDINATOR JOE VONDRICK ENVIRONMENTAL SCIENCE & ENGINEFRING PROJECT NUMBER 88425 0000 FIELD GROUP 36-7-47 ALL

3705A 36-7-47 75	03/09/88	OS	BORE	0	S	ű.	11.0	<0.921	10.3	Ξ.	8.91>	51.6	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	5 <0.35	6.70	3 <0.33	5 <0.26	9 <0.29	7 <0.37	5 <0.25
3704A 36-7-47	03,09788	000	BORE	Ü	v	á	-	<0.921	15.5	8.70	<16.8	33.4	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	6.**O ·	<0.33	<0.26	<0.29	<0.37	<0.25
3703A 36-7-47	03.709,788	S	BORE	Đ	<i>ν</i>	£	10.9	<0.921	11.E	 	<16.8	45.9	<4.70	0.065	<0.94	<0.73	<1.5	<0.25	<0.35	F. 10	<0.33	<0.26	<0.29	<0.37	4
3702A 36-7-47 69	03/09/88	So	BORE	c	v	æ	13.3	<0.921	= =	11.9	22.5	48.9	<4.70	0.320	<0.94	<0.73	<1.5	<0.25	<0.35	(10,29	<0.33	<0.26	<0.29	<0.37	<0.25
3701A 36-7-47 67	03/09/88 09:24	So	BORE	0	S	뜻	9.4	<0.921	<7.16	8.41	<16.8	28.3	<4.70	0.119	<0.94	<0.73	<1.5	<0.25	<0.35	62.05	<0.33	<0.26	<0.29	<0.37	<0.25
3700A 36-7-47 65	03/09/88 09:14	S	BORE	0	S	폺	8.3	<0.921	8.83	9.77	<16.8	36.9	<4.70	0.054	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3699B 36-7-47 62	03/15/88	SO	BORE	4	S	Æ	5.4	<0.921	9.01	10.1	<16.8	43.8	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3699A 36-7-47 36-7-47	03/15/88	00	BORE	0	S	뚩	12.3	<0.921	<7.16	7.74	<16.8	35.3	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3698B 36-7-47 36-7-58	03/16/88	SO	BORE	4	S	뚪	5.0	<0.921	9.50	8.86	<16.8	39.2	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3698A 36-7-47 57	03/16/88	So	BORE	0	S	폺	11.3	<0.921	<7.16	7.38	<16.8	33.5	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
36978 36-7-47 54	03/15/88	တ္တ	BORE	4	S	꾪	5.3	<0.921	<7.16	6.81	<16.8	32.5	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3697A 36-7-47 53	03/15/88	SO	BORE	0	S	풆	13.4	<0.921	9.27	8.77	<16.8	45.1	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3696B 36-7-47 50	03/14/88 08:52	20	BORE	4	S	꿆	5.7	<0.921	11.9	8.38	<16.8	36.3	<4.70	0.061	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3696A 36-7-47 49	03/14/88 08:40	00	BORE	0	S	R	12.0	<0.921	<7.16	10.0	<16.8	39.0	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
36958 36-7-47	03/15/88	80	BORE	4	σ	器	6.3	<0.921	14.5	14.6	<16.8	56.1	<4.70	2.08	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
STORET #		71999	99759	99758	72005	99720	70320	01	995	01	1052	R9 1093	01	719	98356	98655	19886	98653	98654	98703	98652	98651	98363	98364	98365 98365
PARAMETERS Units	DATE TIME	SAMPLE TYPE	SITE TYPE 1	SAMPLE DEPTH	SAMPLING TECHNIQUE	INSTALLATION CODE	MOISTURE	CADMIUM	CHROMIUM	COPPER	UG/G- DRY LEAD	UG/G-DRY ZINC	UG/G-DRY ARSENIC	UG/G- DRY	UG/G-DRY ALDRIN	UG/G-DRY ATRAZINE	UG/G-DRY CHLORDANE		SULFIDE UG/G-DRY P-CLPHENYLMETHY-		SULFONE UG/G-DRY DBCP(NEMAGON)	DICYCLOPENTADIENE	06/6-DRT	007.5-DRT	DIELDRIN UG/G-DRY

ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88
PROJECT NUMBER 88425 0000 PROJECT NAME RMA TASK 47/1
FIELD GROUP 36-7-47 PROJECT MANAGER BILL FRASER
ALL IAB COORDINATOR JOE VONDRICK

37054 36-7-47	03.09,68	<0.50	<0.25	<1.5	<0.70	 :	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25																		
3704A 36-7-47 3	03/09/88 03 09:54	<0.50	<0.25	<1.5	<0.70	<1.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25																	٠	
36-7-47	03, 09, 88 0, 09:46	<0.50	<0.25	<1.5	40.70	·	<0.33	<0.59	<0.26	<0.62	<0.49	<0.25																		
36-7-47 69	03/09/88 (<0.50	<0.25	<1.5	<0.70	-:->	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25																		
3701A 36-7-47 67	03/09/88 09:24	<0.50	<0.25	<1.5	<0.70	-:->	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25																		
3700A 36-7-47 65	03/09/88 09:14	<0.50	<0.25	<1.5	<0.70	<1.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25																		
3699B 36-7-47 62	03/15/88	<0.50	<0.25	<1.5	<0.76	1.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25																		
10/# 3699A 36-7-47 61	03/15/88	<0.50	<0.25	<1.5	<0.70	<1.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25																		
3698B 3698B 36-7-47	03/16/88	<0.50	<0.25	<1.5	<0.70	۵.۱	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25		٠																
3698A 36-7-47 57	03/16/88	<0.50	<0.25	<1.5	<0.70	.:>	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25	2																	
3697B 35-7-47	03/15/88	<0.50	<0.25	<1.5	<0.70		<0.33	<0.59	<0.26	<0.63	<0.49	<0.25	27.0																	
3697A 36-7-47 53	03/15/88	<0.50	<0.25	<1.5	<0.70	<u> </u>	<0.33	<0.59	<0.26	<0.63	<0.49																			
3696B 36-7-47 50	03/14/88 08:52	<0.50	<0.25	<1.5	<0.70	1.1	<0.33	<0.59	<0.26	<0.63	<0.49	<0.25	70.63																	
3696A 36-7-47 49	03/14/88	<0.50	<0.25	<1.5	<0.70	<u>.</u> .	<0.33	<0.59	<0.26	<0.63	<0.49	20 02	67.0																	
3695B 36-7-47	03/15/88	, <0.50	<0.25	<1.5	<0.70	1.15	<0.33	<0.59	<0.26	<0.63	Cf. 49	26 25	57.05																	
STORET # METHOD		98645	05986 60	986 986	69£86	- 986	98649	98648	98644	98658	98656	90	78040	98651	986	88986	611	68986	06986	16986 61	611	26986 26986	986	98694	6M	98695	986	64		68986 68986
PARAHETERS UNITS	DATE TIME		UG/G-DRY 1,4 DITHIANE	UG/C-DRY	UG/G-DRY ENDRIN	LORO	ADIENE UG/G-DRY ISODRIN	UG/G-DRY MALATHION	UG/G-DRY	UG/G-DRY	UG/G-DRY	UG/G-DRY	VAPONA	UG/G-DRY DICYCLOPENTADIENE	5-1,2-	HENE UG/G-DRY ETHYLBENZENE	UG/G-DRY	METHYLENE CHLORIDE	TETRACHLOROETHENE	UG/G-DRY	UG/G-DRY	I, I, I-TRICHLORO- FIHANE UG/G-DRY	1, 1, 2-TRICHLORO-	TEICHLOROFTHENE	UG/G-DRY	M-XYLENE	H18K	UG/G-DRY	UG/G-DRY	BENZENE UG/G-DRY

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PROJECT NAME RMA TASN 47/1
PROJECT MANAGER BILL FRASER
LAB COORDINATOR JOE VONDRICN ENVIRONMENTAL SCIENCE & ENGINEFRING PROJECT NUMBER 88425 0000 FIELD GROUP 36-7-47

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RHA TASK 47/1 R BILL FRASER R JOE VONDRICK
06/24/88 PROJECT NAME RMA TASA 47/1 PROJECT MANAGER BILL FRASER LAB COORDINATOR JOE VONDRICK
LNVIRONMENTAL SCIENCE & ENGINEERING 06/24/88 PROJECT NUMBER 88425 0000 PROJECT NAM FIELD GROUP 36-7-47 LAB COORDII

	3704A 36-7-47	68 (3709788 03709788 46 (09:54 10:02																				2		•	7					
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	3700A 36-7-47 65	03/09/88																							_					
VDR I CK	36998 36-7-47 62	03/15/88																												
TOR JOE VOT	3699A 36-7-47 36-7-47	03/15/88																												
LAB COORDINATOR JOE VONDRICK	SAMPLE 10/# 36988 3 36-7-47 36-	03/16/88																		·										
LAB	3698A 36-7-47 57	03/16/88					•																							
36-/-4/ ALL	3697B 36-7-47	03/15/88																												
r 15L0 GROUP	3697A 36-7-47 53	03/15/88				٠																								
1151	36968 36-7-47 50	03/14/88																												
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	STORET #		00906	60 60906	90618	90619	90626	90631	60	90633	90160	90615	90543	65506	90	60	90576	90578	90622	90624	60. 60.	60	60	90634	90636	90640	60	60 60 60 60 60 60 60 60 60 60 60 60 60 6	65 65	SUPER
	SS UNITS		9/90	9/9N	9/90) (9/90	9/90	9/90	9/90	9/90	, ,	9/90	9/90	9/90	0/90	9/90	0/ 011	2	5/90	9/90	0/00	9/90	3/ 3/1		9/90	9/90	9//90	9/90	
	PARETERS		UNK 600	UNK 609	UNK 6 18	UNK 6 19	UNK 626	HNK631		UNK 633	UNK 160	UNK 615	UNK 543	UNK 559	}	UNN 5 / 3	UNK 576	UNK578	UNK 622	UNK624	UNK 628	,	UNN 6 32	UNK 634	UNN 636	11NN 640		UNN 644	UNY 649	777

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PROJECT NAME RMA TASK 47/1
PROJECT MANAGER BILL FRASER
LAB COORDINATOR JOE VONDRICK ENVIRONMENTAL SCIENCE & ENGINEERING PROJECT NUMBER 88425 0000 FIELD GROUP 36-7-47 ALL

05A -47 75	: 02					6.0																					
3705A 36-7-47	03/09/88																										
3704A 36-7-47	03,09/86 09:54																										
3703£ 36-7-47	03 09 86																		0.9	m	ស						
3702A 36-7-47 69	03,709.38 09:34																										
3701A 36-7-47 67	03/09/88 09:24																										
3700A 36-7-47 65	03/09/88 09:14																										
3699B 36-7-47 62	03/15/68																										
3699A 36-7-47 36-7-47	03/15/88																										
SAMPLE 10/# 3698B 36-7-47 36-7-47 36-	03/16/88																										
3698A 36-7-47 57	03/16/88																										
3697B 36-7-47	03/15/88																										
3697A 36-7-47 53	03/15/88					٠																					
36965 36-7-47 50	03/14/88 08:52																							,	10		
3696A 36-7-47 49	03/14/88																								10		
3695B 36-7-47	03/15/68																										
STORET * METHOD		90577	90594	90629	06906	90637	90555	902206	90582	90 906	60	611	90541	90551	90591	90595	90518	19906	90523	91906	90673	90550	90572	90627	90526	90614 09	
ss UNITS		9/90	0/011		2/20	5/50	9/50	9/90	9/90	9/90	9/90	9/90	9/90		9/90	06/6	9/90	9/90	9/90	2 0	9/90	9/90	2/20	2/90	0,30	9/90	
PERAMETERS	DATE TIME	UNK577	UNK 594	UNK 629	UNK 630	UNK637	UNK 555	UNK556	UNK 582	UNK 6 17	IINK 16.1	01410	UNK 54 1	UNK 551	UNK 59 1	UNK 595	UNK 5 18	UNK661	UNK 523	UNK616	UNK 673	UNK550	UNK572	UNN 627	UNK526	UNN 6 14	
										B-	-15	;															

ENVIRONHENTAL SCIENCE & ENGINEERING 06/24/88 PROJECT NUMBER 88425 0000 PROJECT NAME RMA TASK 47/1 FIELD GROUP 36-7-47 PROJECT MANAGER BILL FRASER ALL LAB COORDINATOR JOE VONDRICK

PARAMETERS UNITS	STORET #	3695B 36-7-47	3696A 36-7-47 49	36968 36-7-47 50	36-7-47 36-7-47 53	36978 36-7-47	3698A 36-7-47 57	3696B 36-7-47 36-7-47 58	10/# 3699A 36-7-47 61	36998 36-7-47 62	3700A 36-7-47 65	3701A 36-7-47 67	37024 36-7-47 69	37034 36-7-47	3704A 36-7-47 73	2705A 36-7-47 75
DATE TIME		03/15/88	03/14/88 03/14/88 08:40 08:52	03/14/88	03/15/88	03/15/88	03/16/88	03/16/88	03/15/88	03/15/88	03/09/88	03/09/88 09:24	03/09/68	03709.788	03.09,88	03-09-88 10:02
UNK635 UG/G	90635				0.8	2										

06/24/88
PRUJECT NAME RHA TASh. 47/1
PROJECT HANAGER BILL FRASER
LAB COORDINATOR JOE VONDRICK ENVIRONMENTAL SCIENCE & ENGINEERING PROJECT NUMBER 88425 0000 FIELD GROUP 36-7-47

PACE# 19

3712A 36-7-47 100	03/14/86	S	BORE	5	S	Œ.	5.1.5	<0.921	<7.16	7.52	416.8	34.3													
37118 36-7-47 98	03/14/86 03 12:54	SO	BORE	2	v	æ	5.8	<0.921	10.3	7.80	8.6.8	32.2													
36-7-17 97-97-	03/14 '88 C	©,	BORE	٥	<i>မ</i> ာ	æ	10.4	<0.921	0.11	90.6	<16.8	36.7													
37106 35-7-47 95	03/14/88	SG	BORE	2	S	æ	3.0	<0.921	<7.16	6.54	<16.8	27.8													
3710A 36-7-47 94	03/14/88	SO	BORE	0	8	Æ	8.3	<0.921	<7.16	8.77	<16.8	34.3													
36-7-47	03/10/88	80	BORE	6	S	*	12.2	<0.921	11.3	13.1	<16.8	37.4	5.97	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
37098 36-7-47 90	03/10/88	S	BORE	4	S	8	8.2	<0.921	14.9	13.7	<16.8	51.3	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
1D/# 3709A 36-7-47 89	03/10/88	00	BORE	ບ	S	**	12.2	<0.921	1.5	14.3	<16.8	53.8	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	0.35
SAMPLE 1 3708C 36-7-47 86	03/10/88 09:46	80	BORE	6	S	Æ	9.5	<0.921	16.0	12.3	8.91>	38.6	<4.70	<0.050	<0.94	<0.73	· <1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3708B 36-7-47 85	03/10/88	80	BORE	4	S	쭖	6.7	<0.921	9.08	9.76	<16.8	34.7	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3708A 36-7-47 84	03/10/88	SO	BORE	0	v	Æ	9.01	<0.921	<7.16	11.2	<16.8	38.5	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	⟨0.33	<0.26	<0.29	<0.37	0.51
3707C 36-7-47 81	03/10/88 08:46	S	BORE	6	S	₩.	8.1	<0.921	9.30	10.7	<16.8	34.1	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
37078 36-7-47 80	03/10/88	SO	BORE	4	v	€	8.6	<0.921	10.6	9.35	8.91>	34.9	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3707A 36-7-47	03/10/88 08:21	00	BORE	0	S	% %	8.7	<0.921	<7.16	6.97	<16.8	25.3	<4.70	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
3706A 36-7-47	03/09/88	SO	BORE	0	v	A.	11.7	<0.921	12.1	9.26	<16.8	38.7	6.15	<0.050	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25
STORET #		71999	99759	99758	72005	99720	70320	1028	99584	1043	1052	1093	1003	71921	98356	98655	98361	98653	98654	98703	98652	98651	98363	98364	98365
PARAMETERS Units	DATE TIME	SAMPLE TYPE	SITE TYPE 1	SAMPLE DEPTH	SAMPLING TECHNIQUE	INSTALLATION CODE	MOISTURE THE THE	CADMIUM 16.75 ABV	CHROMIUM 46 /6 - DAY	COPPER US. 25.5	UG/G- DRI	21NC 21NC	ARSENIC UG/G-DR1	MERCURY 1676-DRY	ALDRIN UC/C-DRY	ATRAZINE UG/G-DAI	CHLORDANE	P-CLPHENYLMETHY-	→ L	P-CLPHENYLMETHY-	¥	DICYCLOPENTADIENE	00E, PP' 06/5-08Y	001, PP *	DIELDRIN UG/G-DRY

PACE#20			
	RMA TASK 4771	BILL FRASER	JOE VONDRICK
06/24/88	PROJECT NAME	PROJECT MANAGER BILL FRASER	LAB COGRDINATOR JOE VONDRICK
CE & ENGINEERING	88425 0000	36-7-47	ALL
ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88	PROJECT NUMBER 88425 0000	FIELD GROUP 36-7-47	

37124 36-7-47 100 13:43 3711B 36-7-47 96 03/14/98 36-7-47 14, 88 S 37108 36-7-47 95 13:22 3 3710£ 36-7-47 94 03/14/88 3709C 36-7-47 91 <0.25 <0.25 <0.25 <0.59 <0.26 <0.25 <0.25 <0.25 <0.25 <0.25 <0.50 <0.25 <0.50 <0.63 <0.49 <0.27 <0.25 <0.25 <0.25 03/10/86 <0.25 <0.33 3709B 36-7-47 90 03/10/88 10:30 <0.50 <1.5 <0.70 <0.26 <0.63 <0.25 <0.25 <0.33 <0.59 <0.49 <u>-</u>. 3709A 36-7-47 89 03/10/88 <0.50 <0.25 <1.5 <0.70 <0.33 <0.59 <0.26 <0.63 <0.49 <0.25 <u>--</u> SAMPLE 10/# 3708C 36-7-47 36-<0.25 <0.25 <0.25 09:46 <0.50 <0.25 <1.5 <0.70 <0.33 <0.59 <0.26 <0.63 <0.49 <0.25 <0.27 <0.25 <0.25 <0.25 <0.25 <0.25 <0.25 <0.25 <0.25 <0.50 <u>:</u> 03/10/88 3708B 36-7-47 85 03/10/88 <0.50 <1.5 <0.26 <0.49 <0.25 <0.25 <0.70 <u>-:</u> <0.33 <0.59 <0.63 3708A \ 03/10/88 <0.25 <0.26 <0.50 <1.5 <0.70 <u>-</u> <0.33 <0.59 <0.63 <0.49 <0.25 84 03/10/88 08:46 3707C 36-7-47 <u>-:</u> <0.26 <0.25 <0.25 <0.25 <0.25 <0.25 <0.25 <0.25 <0.25 <0.25 <0.50 <0.25 <0.50 <1.5 <0.33 <0.63 <0.49 <0.25 <0.27 <0.25 3707B 36-7-47 80 03/10/88 <u>-</u>:-<0.25 <0.50 <0.25 <1.5 <0.33 <0.70 <0.59 <0.26 <0.63 <0.49 3707A 36-7-47 79 03/10/88 08:21 <u>-</u>. <0.25 <.!.5 <0.70 <0.33 <0.59 <0.26 <0.63 <0.49 <0.50 3706A 36-7-47 77 03/09/88 <0.25 <1.5 <0.70 <u>. : </u> <0.25 <0.50 <0.33 <0.59 <0.26 <0.63 <0.49 STORET # 98648 98656 98656 98656 98656 98656 98687 98688 98645 98650 98650 98657 98369 98369 98647 98649 98697 W9 98699 98698 UC/G-DRY TRANS-1,2-DICHLOROET HENE I,4 OXATHIANE
UG/G-DRY
ETY'PARATHION
UG/G-DRY HE XACHLOROCYCLOPENT-AD 1 ENE UG/G-DRY HENE UG/G-DRY ETHYLBENZENE UG/G-DRY UG/G-DRY. UG/G-DRY VG/C-DRY UG/G-DRY UC/C-DRY UG/G-DRY UG/G-DRY UG/G-DRY DICYCLOPENTADIENE METHYLENE CHLORIDE UG/G-DRY UC/C-DRY UG/G-DRY UG/G-DRY UC/C-DRY UG/G-DRY UG/G-DRY UG/G-DRY UG/G-DRY UG/G-DRY TE TRACHLORDE THENE 1, 1, 1-TRICHLORO-ETHANE UG/G-DI 1.1.2-TRICHLORO-ETHANE UG/G-DF UNITS TRICHLOROETHENE 1,4 DITHIANE PEPAMETERS MALATHION SODRIN TOLUENE M-XYLENE BENZENE ENDRIN SUPONA VAPONA DATE OIMP DHMP E B

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06/24/88	PROJECT NAME RMA TASK 47/1	PROJECT MANAGER BILL FRASER	LAB COORDINATOR JOE VONDRICK
ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88	PROJECT NUMBER 88425 0000	FIELD GROUP 36-7-47	ALL

P L PAMETERS UNITS	STORET #	3706A 36-7-47	3707A 36-7-47	37078 36-7-47 80	3707C 36-7-47 81	37084 36-7-47 84	3708B 36-7-47 85	34PLE 1 3708C 36-7-47 86	10/# 3709A 36-7-47 89	37098 36-7-47 90	3709C 36-7-47 91	3710A 36-7-47 94	37106 36-7-47 95	27112 36-7-47 97	37118 36-7-47 98	3/12± 36-7-47 100
DATE TIME		03/09/88	03/10/88	03/10/88	03/10/88 08:46	03/10/88	03/10/88 09:29	03/10/88 09:46	03/10/88	03/10/88	03/10/88	03/14/86	03/14/88	03 14 66	03/14/88 12:54	03/14/88
O-AND/OR P-XYLENE	00/36				<0.50			<0.50			<0.50					
CARBON TETRACHLORIDE	986				<0.25			<0.25			<0.25					
CHLOROBENZENE	98681				<0.25			<0.25			<0.25					
CHLOROFORM	98682				<0.25			<0.25			<0.25					
UG/G-DRT I. I-DICHLOROETHANE	98683				<0.25			<0.25			<0.25					
1, 2-DICHLOROETHANE	98684				<0.28			<0.28			<0.28					
BICYCLOHEPTADIENE	98986				<0.25			<0.25			<0.25					
DBCP (NEMAGON)	98652				<0.33			<0.33			<0.33					
THIODIGLYCOL	99798															
UG/G CHLOROACETIC ACID	97285															
9/90	HH9 HH9															
1878 UG/6	9/382 AAA9															
FLUOROACETIC ACID	97381															
MPA AM	97383															
UNK587	90587															
9/90	00															
9/90	60															
UNK593 UG/G	90593															
UNK 602	90602															
UNK524 US.70	90524		=													
UNK549	90549															
UG/G UNK554	90554															
UG/G UNK558	90558					,										
9/90	60															
9/90	60						•									
0/9n 985 NW 286	98506 98506															
UNK598 UG/G	90598															

PAGE#22 06/24/8E PROJECT NAME RMA TASK 47/1 PROJECT MANAGEL BILL FRASER LAB COGRDINATOR JOE VONDRICK ENVIRONMENTAL SCIENCE & ENGINEERING PROJECT: NUMBER 88425 0000 FIELD GROUP 36-7-47

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	EMA TASK 47/1	BILL FRASER	JOE VONDRICK
06/24/88	PROJECT NAME RMA TASK 47,	PROJECT MANAGER	LAB COORDINATOR JOE VONDRICK
ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88	PROJECT NUMBER 88425 0000	FIELD GROUP 36-7-47	ALL

DATE UNK577 UNK594 UG/G UNK629 UG/G UNK637 UG/G UNK555 UG/G UNK555 UG/G UNK5617 UG/G UNK582 UG/G UNK581 UG/G UNK581 UG/G UNK581 UG/G UNK581 UG/G UNK581 UG/G	Or E	3706A 36-7-47 77 03/09/8\$ 10:10	3707A 36-7-47 79 03/10/88 08:21	3707B 36-7-47 80 03/10/88 08:33	3707C 36-7-47 81 03/10/88 08:46	36-7-47 36-7-47 03/10/88 09:20	36.7-47 85 03/10/88 09:29	36-7-47 36- 86 03/10/88 03/1 09:46 1	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	36-7-47 36-7-47 90 03/10/88 10:30	36-7-47 36-7-47 91 03/10/88 10:47	36-7-47 36-7-47 03/14/8E 12:18	36-7-47 95 03/14/88 13:22	36-747 03/14/E6 12:449	36-747 96 03-114-88 12:54	36-7-47
UNKS95 UG/G UNK518 UG/G UNK611 UG/G UNK673 UG/G UNK673 UG/G UNK550 UG/G UNK520 UG/G UNK526 UG/G UNK526 UG/G UNK526 UG/G	UG/G 90518 UG/G 90518 UG/G 90518 UG/G 90523 UG/G 90524 UG/G 90526 UG/G 90526 UG/G 90526 UG/G 90526 UG/G 90526 UG/G 90526			•												

PAGE#24	_		
	RMA TASK 477	BILL FRASER	JOE VONDRICK
06/24/88	PROJECT NAME	PROJECT MANAGER BILL FRASER	LAB COGRDINATOR JOE VONDRICK
ENVIRONMENTAL SCIENCE & ENGINEERING 06/24/88	PROJECT NUMBER 88425 0000	FIELD GROUP 36-7-47	ALL

03 14/86 37124 36-7-47 100 03/14.88 3711B 36-7-47 98 03/14/88 36-7-47 03/14/68 37104 36-7-47 94 03/14/88 3709C 36-7-47 91 03/10/88 3709B 36-7-47 90 03/10/88 03/10/88 03/10/88 03/10/88 09:29 09:46 10:20 10:30 SAMPLE 10/# 3708C 3709A 36-7-47 36-7-47 86 89 3708B 36-7-47 85 36-7-47 36-7-47 84 03/10/86 03/10/88 08:46 3707C 36-7-47 81 03/10/68 08:33 3707B 36-7-47 80 03/10/66 3707A 36-7-47 79 03/09/88 STORET # 90635 Q9 PARAMETERS UNK 635 CATE

9/90

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ENVIPONMENTAL SCIENCE & ENGINEERING PROJECT NUMBER 88425 0000 FIELD GROUP 36-7-47 ALL

06/24/88
PROJECT NAME RMA TASN 47/1
PROJECT MANAGER BILL FRASER
LAB COORDINATOR JOE VONDRICN

SAMPLE 1D/#

<0.29 <0.26 <0.29 <0.37 <0.25 <1.5 <0.25 <0.35 <0.33 77.8 <4.70 <0.94 <0.73 <7.16 40.5 <16.8 21.6 <0.050 03/16/88 3688B 36-7-47 104 S BORE ~ ₹ <0.921 <0.73 <0.26 <0.29 <0.37 <0.25 <1.5 <0.25 <0.35 <0.29 <0.33 38.7 <16.8 <4.70 0.125 3688A 36-7-47 103 15.6 <7.16 11.4 <0.94 09:40 <0.921 03/116/88 S £ BORE <16.8 40.1 03/14/88 3712B 36-7-47 1.3 9.00 <u></u> S BORE Æ 5.6 <0.921 1093 1003 1003 1003 71921 98356 98655 98653 98653 98653 98653 98659 98659 98659 98659 60 STORET # 1043 R9 1052 R9 99758 71999 99759 72005 99720 1028 R9 99584 R9 SULFOXIDE UG/G-DRY
P-CLPHENYLMETHYSULFONE UG/G-DRY P-CLPHENYLMETHY-SULFIDE UG/G-DRY P-CLPHENYLMETHY-UG/G- DRY UG/G- DRY UG/G-DRY UG/C-DRY UG/G-DRY UG/G- DR) UG/G-DRY UG/G-DRY UG/G-DRY UG/G-DRY UG/G-DRY UG,'G-DRY UG/G-DRY UG/G-DRY SAMPLING TECHNIQUE INSTALLATION CODE SAMPLE MHET WT UNITS DBCP (NEMAGON) SAMPLE DEPTH SITE TYPE 1 SAMPLE TYPE PARAMETERS CHLORDANE DIELDRIN ATRAZINE CHROMIUM COE PP DDT, PP MOISTURE APSENIC CADMIUM MERCURY AL DR IN COPPER LE AD ZINC DA.TE TIME

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SAMPLE 1D/#

11 11 12 13 14 18 13 16 18 18 18 18 18 18 18	PARAMETERS UNITS	STORET # METHOD	3712B 36-7-47 101	3688A 36-7-47 103	36-7-47 104	
98645 (0.50 98650 (0.25 98650 (0.25 98650 (0.25 98650 (0.70 98648 (0.33 98649 (0.33 98649 (0.33 98649 (0.33 98648 (0.63 98648 (0.63 98648 (0.63 98648 (0.63 98648 (0.63 98648 (0.63 98648 (0.63 98648 (0.63 98648 (0.63 98656 (0.49 98656 (0.49 98656 (0.49 98658 (0.63 98658 (0.49 98658 (0.49 98658 (0.49 98659	DATE . TIME		03/14/88	03/16/88 09:40	03/16/88 09:51	
98650 (0.25 98657 (1.5 98657 (1.5 98657 (1.1 98647 (1.1) 98649 (0.33 98649 (0.33 98649 (0.25 98648 (0.63 98648 (0.63 98658 (0.63 98658 (0.63 98658 (0.63 98658 (0.63 98651 (0.63 98652 (0.63 98653 (0.63 98654 (0.63 98654 (0.63 98654 (0.63 98654 (0.63 98655 (0.63 98655 (0.63 98655 (0.63 98655 (0.63 98655 (0.63 98656 (0	DIMP	98645		<0.50	<0.50	
77. 98657 (1.5 78. 98657 (1.5 78. 98649 (0.70 78. 98649 (0.33 78. 98658 (0.63 78. 98658 (0.63 78. 98658 (0.63 78. 98658 (0.63 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98651 (0.25 78. 98652 (0.25 78. 98653 (0.25 78. 98653 (0.25 78. 98654 (0.25 78. 98654 (0.25 78. 98654 (0.25 78. 98654 (0.25 78. 98654 (0.25 78. 98655 (0.25 78. 98655 (0.25 78. 98655 (0.25 78. 98657 (0.2	UG/G-DRT 1,4 DITHIANE	98650		<0.25	<0.25	
1		98657		<1.5	<1.5	
1. 98647	ENDRIN UG/G-DRT	98369		<0.70	<0.70	
98649 (0.33 98648 (0.26 98644 (0.26 98644 (0.26 98658 (0.63 98656 (0.49 98656 (0.49 98651 98651 98651 98651 98651 98651 98651 98651 98690	US/6-DRT. HEXACHLOROCYCLOPENT- ADLENE 116/6-DRY	98647			41.1	
98648 (0.59 98648 (0.63 98644 (0.63 98658 (0.63 98656 (0.63 98656 (0.63 98656 (0.49 98651 98688 (0.49 98651 98689 (0.25 98689 98691 98691 98692 98692 98693 98692 98693 98694 98694 98696 98696 98696 98696 98696 98696 98696 98696 98696 98696 98696 98696 98696 98696	z	98649		<0.33	<0.33	
98644 (0.26 98644 (0.26 98658 (0.63 98656 (0.49 98656 (0.49 98651 98651 98651 98689 98689 98689 98689 98689 98689 98689 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690		98648		<0.59	<0.59	
96658 (0.63 97 98656 98656 (0.49 98646 (0.49 98646 (0.25 98651 98651 98651 98688 98688 98690 9860	1,4 OXATHIANE	98644		<0.26	<0.26	
98656 (0.49 98656 (0.25 98646 (0.25 98646 (0.25 98651 98687 98687 98688 98689 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690 98690	UG/G-DRY ETY'PARATHION	98658		<0.63	<0.63	
98646 (0.25 17 98651 18 98651 18 98687 18 98689 18 98689 18 98690 18 98691 18 98692 18 98693 18 98693 18 98694 18 98696 18 98696 18 98696 18 98696		98656		<0.49	<0.49	
77 98651 78 49 79 49 77 49 78 98689 77 98689 78 98690 79 98691 77 98693 78 98694 79 98694 77 98696 78 98696 78 98696 78 98696		98646		<0.25	<0.25	
7	UG/G-DRY DICYCLOPENTADIENE	98651			<0.27	
17 98688 18 98689 18 98689 18 98690 18 98691 18 98692 18 98693 18 98694 18 98695 18 98696 18 98696 18 98697	UG/G-DRY TRANS-1,2-DICHLOROET				<0.25	
11. 98689 12. 98689 13. 98691 14. 98692 15. 98692 17. 98693 17. 98694 17. 98695 17. 98696 17. 98697 17. 98699	LBENZE	88986 88986			<0.25	
44	UG/G-DRY METHYLENE CHLORIDE	98689			0.63	
7. 98691 7. 98692 7. 98693 7. 98693 7. 98694 7. 98695 7. 98695 7. 98695 7. 98696	UG/G-DRY TETRACHLOROETHENE	06986 6H			<0.25	
17 98692 18 98693 17 98694 17 98694 17 98695 18 98696 18 98696 18 98699		16986 98691			<0.25	
17 98692 17 98693 17 98694 17 98695 18 98696 17 98697 18 98697	UG/G-DRY	611				
98693 14 H9 17 H9 18 98695 18 H9 18 H9 18 H9 18 H9	ETHANE UG/G-DRY	7899K			<0.25	
HEOROGIAN 198694 LENE 98695 LENE 98695 UG/G-DRY H9 UG/G-DRY H9 UG/G-DRY H9 ENE 98697	1.1.2-TRICHLORO-	98693			<0.25	
LENE UG/G-DRY H9 LENE UG/G-DRY H9 UG/G-DRY H9 UG/G-DRY H9 ENE UG/C-DRY H9	TRICHLOROETHENE	98694			<0.25	
UC/G-DRY H9 UC/G-DRY H9 UC/G-DRY H9 UC/C-DRY H9 ENE		611.0			4	
98696 UG/G-DRY H9 98697 UG/G-DRY H9 ENE 98699		5,693,6 6,11			<0.25	
98697 UG/G-DRY H9 ENE 98699		986986			<0.50	
66986		98697			<0.25	
		98699			<0.25	

ENVIRONMENTAL SCIENCE & ENGINETRING PROJECT NUMBER 88425 0000 FIELD GROUP 36-7-47 ALL

SAMPLE 10/#

PACE#29

06/24/88
PROJECT NAME RMA TASh 47/1
PROJECT MANAGER BILL FRASER
LAB COORDINATOR JOE VONDRICH

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60	90582	60	71906	60	19106	64	90541	60	90551	60	90591	60	90595	60	90518	60	19906	60	90523	60	90616	60	90673	60	90550	60	90572	60	90627	60	90526	60	90614	60
9/90		9/90		9/90		9/90		9/9N		9/90		9/JN		9/90		5/90		9/90		9/90		9/90		0/90		9/90		9/90		9/90		9/90		9/90
	UNK582		2- UNK617		UNK 161		UNK 54 1		UNK 551		UNK 591		UNKS95		UNK518		UNK 661		UNK523		UNK 6 16		UNK673		UNK 550		UNK572		UNK627		UNK526		JNK614	

03/16/88 03/16/88 09:40 09:51 03/14/88

3688B 36-7-47 104

3688A 36-7-47 103

3712B 36-7-47 101

STORET #

UNITS

PARAMETERS

9/90 9/90 9/90 9/90

UNK577 **UNK594** UNK 629 UNK 630 UNK637

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PAGE#30

06/24/88 PROJECT NAME BHA 145A 47/1 PROJECT MANAGER BILL FRASER LAB GGORDINATOR JOE VONDRICK

SAMPLE 1D/#

3688B 36-7-47

3683A 36-7-47 103

3712B 36-7-47 101

STORET # METHOD

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ENVIRONMENTAL SCIENCE & ENGINEFRING PROJECT NUMBER 88425 UNIO FIELD GROUP 36-7-47 ALL

B-26

PAGE#1	BLK BLK BLK BLN 6LN 8LN 8LN 747MB1 74	88 03/15/88 03/10/88 01/26/88 02/04/88 03/09/88 03/09/88	OS OS OS OS OS OS	QCMB QCMB QCMB QCMB QCMB		0 0 0 0	RK RK RK RK RK RK	2.4 2.4 2.4 2.4 2.4 2.4 2.4						<4.70 <4.70 <4.70	<0.050 <0.050 <0.050 <0.050 <0.050		
06/28/88 PROJECT NAME RHA TASK I PROJECT MANAGER LAB COORDINATOR JOE VONDRICK	BLK 47MB1 21	02/03/88 03/09/88	80	QCMB	0	9	ž	2.4						5.59			
06/28/88 PROJECT NAME PROJECT MANAGER LAB COORDINATOR	SAMPLE 10/# BLK T21MB2 T	03/16/88	SO	QCMB	0	o	æ	2.4						<4.70			
	BLK 147#B1 8	03/10/88	80	QCMB	0	9	꿆	2.4	<0.921	12.8	9.76	<16.8	35.0				
ENCE & ENGINE ER 84936 0300 TIMB ALL	8LK 147MB1 7	02/12/88	00	QCMB	0	ပ	풒	2.4	<0.921	<7.16	8.20	<16.8	29.6				
ENVIRONMENTAL SCIENCE & ENGINEERING PROJECT NUMBER 84936 0300 FIELD GROUP TIMB ALL	BLK T47MB1 6	88/60/£0	SO	OCHB	0	υ	¥	2.4	<0.921	9.99	10.1	<16.8	33.3				
ENVIRONNE PROJ FIEL	BLK T47MBI	02/02/88 03/09/88	S	QCMB	0	9	*	2.4	<0.921	10.4	10.1	<16.8	39.3				
•	BLK T21MB2	03/11/88	SO	QCMB	0	S	XX.	2.4	<0.921	14.3	9.01	<16.8	40.9				
	BLK T1MB 488	10/27/87	SO	OCMB	0	5	X.	2.4	<0.921	12.1	9.56	<16.8	41.7				
	STORET #		71999	99759	99766	JE 72005	99720	70320	Ξ	66	2	=	2	=	71921 71921	66	σ
	PARAMETERS UNITS	DATE	SAMPLE TYPE	SITE TYPE 1	SAMPLE DEPTH	FI SAMPLING TECHNIQUE	INSTALLATION CODE	MOISTURE	CADMIUM 10000 000	CHROMIUM	UG/G-DRY COPPER	UG/G- DRY	ZINC UG/G-DRY	ARSENIC SOLVE-URI	UG/G- DRY MERCURY	UG/G-DRT THIODIGLYCOL	CHIOROACETIC ACID

PAGE#2

SAMPLE 1D/#

BLK T47MB1 61

BLK T47MB1 50

STORET # METHOD

PARAMETERS UNITS

DATE

03/16/38 02/02/88

S	OCMB	0	9	퐀	2.4											<2.55		<18.0	
80	QCNB	0	ຶ່	퐀	2.4									<0.050					
71999	99759	99758	72005	99720	70320	1028	99584	R9 1043	R9	1052 R9	1093 R9	1003	T9	71921	6^	99798	enn 6	97285	MM9
SAMPLE TYPE	SITE TYPE I	SAMPLE DEPTH	SAMPLING TECHNIQUE	INSTALLATION CODE SAMPLE	MOISTURE	CADMIUM	CHROMIUM	COPPER UG/G-DRY		LEAD UG/G-DRY	ZINC IIG/G-DRY	ARSENIC	UG/G- DRY	MERCURY	UG/G-DRY	THIODIGLYCOL	9/90	CHLOROACETIC ACID	9/90

06/28/88 PROJECT NAME RMA TASK ! PROJECT MANAGER ENVIRONMENTAL SCIENCE & ENGINEERING PROJECT NUMBER 84936 0300 FIFID GROUP TIME

PAGE#1

NDRICK																										
PROJECT MANAGER LAB COORDINATOR JOE VONDRICK	SAMPLE 10/# BLK T47MB1 89		0		0	s	퐀	4	4	gn	ı,	S	35	53	33	92	59	37	25	20	25	<1.5	02	(1.1	33	59
COORDIN	SAMPLE BLK T47MB1 89	89/91/60	SO	QCMB			œ	2.4	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25	<0.50	<0.25		<0.70		<0.33	(0.59
PRC	BLK T47#B1 88	03/14/88	SO	OCMB	0	S	¥	2.4	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25	<0.50	<0.25	<1.5	<0.70	÷.:	<0.33	<0.59
TIMB ALL	BLK T47MB1 87	03/09/88	8	QCMB	0	O	X.	2.4	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25	<0.50	<0.25	<1.5	<0.70	=======================================	<0.33	<0.59
FIELD GROUP	BLK 147MB1 86	03/10/88 09:15	S	QCMB	0	9	꿆	2.4	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25	<0.50	<0.25	<1.5	<0.70	1.1	<0.33	<0.59
FIELD	BLK T47MB1 85	03/09/88	S	QCMB	0	O	¥	2.4	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25	<0.50	<0.25	<1.5	<0.70	<1.1	<0.33	(0.59
	BLK TIMB 412	02/02/88	S	QCMB	0	O	爰	2.4	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25	<0.50	<0.25	<1.5	<0.70	÷.	<0.33	<0.59
	BLK TIMB 411	02/02/88	80	QCMB	0	9	æ	2.4	<0.94	<0.73	<1.5	<0.25	<0.35	<0.29	<0.33	<0.26	<0.29	<0.37	<0.25	<0.50	<0.25	<1.5	<0.70	÷ 	<0.33	<0.59
	STORET #		71999	99759	99758	72005	99720	70320	98356	98655	98361	98653	98654	98703	98652	98651	98363	98364	98365	98645	986 986	98657	69886	986	98649	99 98648 99
	PARAMETERS UNITS	DATE TIME	SAMPLE TYPE	SITE TYPE I	SAMPLE DEPTH	SAMPLING TECHNIQUE	INSTALLATION CODE	MOISTURE	ALDRIN	UG/G-DRY ATRAZINE	UG/G-DRY CHLORDANE		SULFIDE UG/G-DRY P-CLPHENYLMETHY-	PE NYL	SULFONE UG/G-DRY DBCP(NEMAGON)	UG/G-DRY DICYCLOPENTADIENE	06/6-DR1	007_PP*	UG/G-DRY	UG/G-DRY D1%P	UG/G-DRY 1,4 DITHIANE	UG/G-DRY	UG/G-DRY ENDRIN	L 0.R.0	ADIENE UG/G-DRY ISODRIN	UG/G-DRY MALATHTON UG/G-DRY

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ENVIRONMENTAL SCIENCE & ENGINEERING	CINEERING	06/28/
PROJECT NUMBER 88425	0000	PROJECT
FIELD CROUP TATMRI		PROJECT

06/28/88
PROJECT NAME RMA TASK 47
PROJECT MANAGER
LAB COORDINATOR JOE VONDRICK

PAGE#1

SAMPLE 10/#

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ALL																										
	BLK T47#81 230	03/16/88	8	OCHB	0		æ	2.4	<0.27	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.50	<0.25	<0.25	<0.50	<0.25	<0.25	<0.25	<0.25
	BLK T47MB1 229	03/15/88	80	OCMB	0	9	퐀	2.4	<0.27	<0.25	<0.25	0.40	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.50	<0.25	<0.25	<0.50	<0.25	<0.25	<0.25	<0.25
	BLK T47MB1 228	03/14/88	So	QCMB	0	ပ	풒	2.4	<0.27	<0.25	<0.25	0.99	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.50	<0.25	<0.25	<0.50	<0.25	<0.25	<0.25	<0.25
	BLK T47MB1 227	03/10/88	SO	OCHB	0	9	퐀	2.4	<0.27	<0.25	<0.25	0.94	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.50	<0.25	<0.25	<0.50	<0.25	<0.25	<0.25	<0.25
	STORET # METHOD		71999	99759	99758	72005	99720	70320	98651	986	88986	68986	06986	98691	H9 98692	68693	98694	98695	96986	98697	66986	98700	986	98681	98682	98683 98683
	PARAMETERS UNITS	DATE TIME	SAMPLE TYPE	SITE TYPE 1	SAMPLE DEPTH	SAMPLING TECHNIQUE	INSTALLATION CODE	MOISTURE SHET HE	DICYCLOPENTADIENE	S-1,2-	HENE UG/G-DRT ETHYLBENZENE	METHYLENE CHLORIDE	TETRACHLOROETHENE	TOLUENE US/ 5-DRI	UG/G-DRY I, I, I-TRICHLORO-	ETHANE UG/G-DRY	ETHANE UG/G-DRY TRICHLOROETHENE	UG/G-DRY M-XYLENE	MIBK	UG/G-DRY DNDS	UG/G-DRY BENZENE	UG/G-DRY O-AND/OR P-XYLENE	UG/G-DRY CARBON TETRACHLORIDE	UG/G-DRY CHLOROBENZENE	CHLOROFORM	UG/G-DRY I, 1-DICHLOROETHANE UG/G-DRY
										B	-30															

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06/28/88
PROJECT NAME RMA TASK 47
PROJECT MANAGER
LAB COORDINATOR JOE VONDRICK

PAGE#2

SAMPLE 10/#

<0.33 S BLK T47MB1 230 <0.28 <0.25 03/16/88 <0.25 <0.33 BLK T47MB1 229 03/15/88 <0.28 100 <0.28 <0.25 <0.33 S BLK 147MB1 228 03/14/88 BLK T47MB1 227 <0.33 03/10/88 <0.25 9 <0.28 STORET # METHOD 98684 N9 98686 N9 98652 90160 N9 90159 1,2-DICHLOROETHANE 0G/G-DRY BICYCLOHEPTADIENE UG/G-DRY DBCP (NEMAGON) UNITS 9/90 0/90 PARAMETERS **UNK 160** UNK 159 DATE